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11. Borborocœtes coppingeri. (PLATE XVII. fig. 2.)

Cacotus coppingeri, *Günth. Proc. Zool. Soc.* 1881, p. 19.

Tongue entire. Vomerine teeth in two strong oblique series between the choanæ. Head depressed; snout rounded, shorter than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; no tympanic disk. First finger not extending beyond second; toes slightly fringed, with a rudiment of web; subarticular tubercles well developed; two metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the hinder edge of the eye. Skin of upper surfaces with very minute tubercles. Olive above.

W. coast of Patagonia.

a. ♀.	W. coast of Patagonia.	Dr. Coppinger [C.]. (Type.)

Cyclorhamphus fasciatus, Peters, Mon. Berl. Ac. 1869, p. 789 (*Cystignathus fasciatus*, id. ibid. p. 881), appears to belong to this genus.

Vomerine teeth in two oblique series, a little behind the level of the hinder edge of the choanæ. Tongue entire. Toes free. No palmar tubercle; two metatarsal tubercles. Skin quite smooth. Brown, with dark cross bars.

Puerto Montt, Chili.

18. ZACHÆNUS.

Zachænus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Pupil horizontal. Tongue subcircular, entirely adherent. Vomerine teeth in a transverse series upon palatine arch. Tympanum distinct. Fingers and toes free, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

Brazil.

1. Zachænus parvulus.

Cystignathus parvulus, *Girard, U.S. Explor. Exped., Herp.* p. 35, pl. 3. f. 34–38.

Zachænus parvulus, *Cope, l. c.*

Vomerine teeth disposed upon a transverse series, scarcely interrupted in the middle, and obliquely situated behind the choanæ. Snout rounded; tympanum smaller than the eye. Fingers depressed, first longer than second; toes slender, depressed, bordered by a membranous fold; two metatarsal tubercles. Hind limb a little longer than head and body. Skin everywhere perfectly smooth. Light yellowish or reddish brown above; a chestnut-brown vitta extends from the snout, over the nostrils, to the anterior

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rim of the eye; behind the eye the vitta is superiorly margined with white, and runs obliquely towards the occiput, hence, diverging towards the sides, terminates about the middle of the trunk; legs barred with blackish brown; reddish brown beneath; on each side a blackish-brown, elongated, tapering patch, proceeding from the belly, inclined anteriorly towards the chest.

Rio Janeiro.

19. LIMNODYNASTES.

Limnodynastes, *Fitzinger, Syst. Rept.* p. 31; *Günth. Cat.* p. 32; *Cope, Nat. Hist. Rev.* 1865, p. 113.
Cystignathus, sp., *Dum. & Bibr.* viii. p. 409.
Perialia, *Gray, in Eyre's Journ. Exped. Centr. Austr.* i. p. 406.
Wagleria, *Girard, Proc. Ac. Philad.* 1853, p. 421.
Platyplectrum, *Günth. Ann. & Mag. N. H.* (3) xi. p. 27; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.
Opisthodon, *Steindachn. Novara, Amph.* p. 9.
Heliorana, *Steindachn. l. c.* p. 32.
Borborocœtes, sp., *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Pupil erect. Tongue subcircular, entire or slightly nicked, and free behind. Vomerine teeth in a series behind the choanæ. Ear perfectly developed; tympanum not, or but slightly distinct. Fingers free; toes free or slightly webbed, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Terminal phalanges simple.

Australia.

Synopsis of the Species.

I. Inner metatarsal tubercle small, blunt.

Tarso-metatarsal articulation reaching beyond the tip of the snout; snout much longer than the orbital diameter ..... 1. *peronii*, p. 258.
Tarso-metatarsal articulation not reaching the tip of the snout; first finger a little longer than second ..... 2. *salminii*, p. 259.
Tarso-metatarsal articulation not reaching the tip of the snout; first finger not extending quite as far as second ..... 3. *tasmaniensis*, p. 260.
Tarso-metatarsal articulation reaching the tip of the snout; snout not longer than the orbital diameter ..... 4. *platycephalus*, p. 260.

II. Inner metatarsal tubercle large, shovel-shaped.

A large parotoid-like gland on the calf .. 5. *dorsalis*, p. 261.
No large gland on the calf ..... 6. *ornatus*, p. 262.

1. Limnodynastes peronii.

Limnodynastes peronii, *Günth. Cat.* p. 134.
Cystignathus peronii, *Dum. & Bibr.* p. 409.

b-m. ♂♀ Pt Mackay, Queensland. Ling Roth.
(as typical of L. lineatus, De Vis)
w. ♀♂ Sydney Fletcher.
o-p. ♀ Barrawang, N. S. W. "
g. ♂ Warragul, Gippsland, Viet. "

Limnodynastes olivaceus, De Vis
a. ♀ Pt Mackay, Queensland. Ling Roth.
(Type)

Wagleria peronii, *Girard, Proc. Ac. Philad.* 1853, p. 421.
Limnodynastes krefftii, *Günth. Ann. & Mag. N. H.* (3) ii. p. 26; *Steindachn. Novara, Amph.* p. 26.
—— peronii, *Keferst. Götting. Nachr.* 1867, p. 343, *and Arch. f. Naturg.* 1868, p. 257, pl. 5. f. 1.

Habit of *Discoglossus*. Tongue subcircular, slightly nicked behind. Vomerine teeth in a straight or slightly arched, scarcely interrupted series behind, and extending outwards beyond the choanæ. Snout blunt, much longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum slightly visible. First and second fingers equal; three metacarpal tubercles; toes elongate, free, slightly fringed; subarticular tubercles well developed; a small, blunt, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches beyond the tip of the snout. Skin smooth, or with very indistinct longitudinal folds on the back; a glandular fold from below the eye to the shoulder. Brownish or olive above, with black spots confluent into longitudinal stripes on the back; frequently a light vertebral line; a dark stripe from the tip of the snout along the canthus rostralis, through the eye to the shoulder; beneath more or less speckled with brown. Male with a subgular vocal sac; female with a fringe along the first and second fingers.
Australia.

a. ♂.	Van Diemen's Land.	Sir A. Smith [P.].
b, *c*, *d–f*. ♂, ♀, & yg.	Sydney.	G. Krefft, Esq. [P.]. (Types of *Limnodynastes krefftii*.)
g. ♂.	Queensland.	G. Krefft, Esq. [P.].
h–i. ♂ ♀.	Erromanga.	
k. ♂.	——?	C. Darwin, Esq. [P.].

2. Limnodynastes salminii.

Limnodynastes salmini, *Steindachn. Novara, Amph.* p. 27, pl. 4. f. 12–15; *Keferst. Arch. f. Naturg.* 1868, p. 259.

Habit stout. Tongue subcircular, slightly nicked behind. Vomerine teeth in a straight, scarcely interrupted series behind, and extending outwards beyond the choanæ. Snout rounded, a little longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum slightly visible. First finger a little longer than second; a tubercle between the first and second, and the second and third fingers; three metacarpal tubercles; toes rather short, free; subarticular tubercles well developed; a small, blunt, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or between the eye and the nostril. Skin smooth; a glandular fold from below the eye to the shoulder. Olive above, with round blackish spots; a blackish streak from the eye to the shoulder; three more or less distinct

pink stripes along the back; sides of body and limbs blackish, dotted with white; throat marbled with brown. Male with a subgular vocal sac; female with a fringe along the second finger.

Australia.

a. Hgr.	Sydney.	
b, *c*. Hgr. & yg.	Clarence River.	G. Krefft, Esq. [C.].
d, *e*. ♂ ♀.	Rockhampton.	Hr. Dämel [C.].
f. Yg.	Port Denison.	

3. Limnodynastes tasmaniensis.

Limnodynastes tasmaniensis, *Günth. Cat.* p. 33, pl. ii. f. B.
Limnodynastes affinis, *Günth. Ann. & Mag. N. H.* (3) ii. p. 27.
—— tasmaniensis, *Steindachn. Novara, Amph.* p. 26; *Keferst. Arch. f. Naturg.* 1868, p. 258.
—— peronii, var. tasmaniensis, *Keferst. Götting. Nachr.* 1867, p. 344.

Habit moderate. Tongue subcircular, slightly nicked behind. Vomerine teeth in a straight, scarcely interrupted series behind, and not extending outwards beyond the choanæ. Snout rounded, longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as, or narrower than, the upper eyelid; tympanum indistinct. First finger not extending quite as far as second; three metacarpal tubercles; toes moderate, slightly fringed; a small blunt inner, and a very small outer metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or between the eye and the nostril. Skin smooth or with hardly conspicuous warts above; a glandular fold from below the eye to the shoulder. Olive above, with insuliform dark spots; a dark streak from the tip of the snout, through the eye, to the shoulder; generally a light vertebral line. Male with a subgular vocal sac, and, during the breeding-season, blackish rugosities on the inner side of the two inner digits; female with the two inner digits broadly fringed.

Tasmania; Australia.

a–*c*. ♀.	Tasmania.	R. Gunn, Esq. [P.]. (Types of *L. tasmaniensis*.)
d–*g*. ♂ & hgr.	Tasmania.	Sir A. Smith [P.].
h. Several spec., ♂ ♀.	Sandhurst, Victoria.	Col. Beddome [P.].
i–*k*. ♀.	Queensland.	G. Krefft, Esq. [P.].
l. ♀.	Clarence River.	G. Krefft, Esq. [C.]. (Type of *L. affinis*.)
m. ♂.	Rockhampton.	
n–*o*. ♂.	New Holland.	J. B. Jukes, Esq. [P.]. (Types of *L. tasmaniensis*.)
p–*q*. ♀ & yg.	New Holland.	

4. Limnodynastes platycephalus. (Plate XVII. fig. 3.)

Limnodynastes platycephalus, *Günth. Ann. & Mag. N. H.* (3) xx. p. 54.

r-t.	♂ ♀ hgs.	Carpentee, N. S. W.	Fletcher
w.	Hgs.	Pt Darwin.	Walker
v.	♀	Sydney.	Fletcher.

Limnodynastes fletcheri, Blgr.

a-b. ♂♀ Gunnawang, nr. Mudgee, N. S. W. Fletcher. (Types)

c. ♂ Wentworth, N. S. W. Fletcher

d. ♀ Waroo, S. Queensland.

v-w. ♂♀ Pt. Mackay, Queensland. Eng. Roth.

v. ♂♀ N. Sydney. Fletcher.

w. x. ♂ Chapman R., W. Australia. Saunders.

Closely allied to *L. tasmaniensis*, from which it differs by a much depressed head, a shorter snout, the length of which equals the orbital diameter, and longer hind limbs, the tarso-metatarsal articulation reaching the tip of the snout.

S. Australia.

a–b. ♂.	Adelaide.	G. Krefft, Esq. [P.].	(Types.)

5. Limnodynastes dorsalis.

Limnodynastes dorsalis, *Günth. Cat.* p. 33.
Cystignathus dorsalis, *Gray, in Grey's W. Austr.* p. 466, *and in Eyre's Journ. Exped. Centr. Austr.* i., *App.* p. 407, pl. 1. f. 2.
Wagleria dorsalis, *Girard, Proc. Ac. Philad.* 1853, p. 421.
Limnodynastes (Platyplectron) dumerilii, *Peters, Mon. Berl. Ac.* 1863, p. 235.
Heliorana grayi, *Steindachn. Novara, Amph.* p. 32, pl. 2. f. 11–14.
Platyplectrum superciliare, *Keferst. Götting. Nachr.* 1867, p. 346.
Heliorana superciliaris, *Keferst. Arch. f. Naturg.* 1868, p. 267, pl. 5. f. 7.
Limnodynastes dorsalis, *Günth. Journ. Mus. Godeffr.* xii. 1876, p. 47.

Habit of *Pelobates*. Tongue subcircular, slightly nicked behind. Vomerine teeth in a straight, scarcely interrupted series behind, and not extending outwards beyond the choanæ. Snout rounded, longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout, or a little nearer the eye; interorbital space as broad as the upper eyelid; tympanum very indistinct. First and second fingers equal; a tubercle between the first and second, and the second and third fingers; toes rather short, with a slight rudiment of web; subarticular tubercles well developed; a large, shovel-shaped inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of the eye. Skin smooth, or with flat glands on the back; an elongated white gland from beneath the eye to the shoulder; a large parotoid-like gland on the calf. Brown or olive above, darker marbled; a broad dark streak from the eye to the shoulder; often a light vertebral line; beneath immaculate, or more or less spotted with brown. Male with a subgular vocal sac; female with a fringe along the inner side of the second, and frequently also the third finger.

Australia.

a. ♂.	W. Australia.	J. Gould, Esq. [P.].	(Type.)
b. Yg.	W. Australia.		
c. ♂.	Houtmans Abrolhos.		
d–e, f–g. ♂, ♀, & hgr.	Adelaide.	G. Krefft, Esq. [P.].	
h–l. ♂, ♀, & yg.	Queensland.	G. Krefft, Esq. [P.].	
m–n. ♂ ♀.	Gayndah.	Mus. Godeffroy.	
o–p. ♂ ♀.	Port Essington*.	Dr. Fleming [P.].	

* The stomach of the female contains a half-grown *Ichthyophis albo-guttatus*.

6. Limnodynastes ornatus.

Limnodynastes ornatus, *Günth. Cat.* p. 33.
Discoglossus ornatus, *Gray, Zool. Misc.* p. 56.
Perialia ornata, *Gray, in Eyre's Journ. Exped. Centr. Austr.* i., *App.* p. 407, pl. 2. f. 2.
Platyplectrum marmoratum, *Günth. Ann. & Mag. N. H.* (3) xi. p. 27, pl. 4. f. A; *Keferst. Götting. Nachr.* 1867, p. 345, *and Arch. f. Naturg.* 1868, p. 261.
—— occidentale, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 90.
—— ornatum, *Keferst. Götting. Nachr.* 1867, p. 346, *and Arch. f. Naturg.* 1868, p. 261.
Opisthodon frauenfeldii, *Steindachn. Novara, Amph.* p. 9, pl. 1. f. 1–4.
Limnodynastes ornatus, *Günth. Zool. Rec.* iv. p. 145.

Habit of *Alytes obstetricans*. Tongue subcircular, entire or slightly nicked behind. Vomerine teeth in a straight or slightly arched, scarcely interrupted series behind, not extending outwards beyond the choanæ. Snout rounded, as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space narrower than the upper eyelid; tympanum indistinct. First and second fingers equal; two metacarpal tubercles; toes rather short, one-third webbed, the web extending as a fringe to their tips; subarticular tubercles well developed; inner metatarsal tubercle large, shovel-shaped. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or between the eye and the tip of the snout. Skin of upper surfaces with small smooth tubercles. Olive above, marbled with darker; generally a light, dark-edged cross band between the eyes; sometimes a light spot on the occiput; sometimes a light vertebral stripe; beneath immaculate. Male with a subgular vocal sac and, during the breeding-season, brown rugosities on the inner side of the two first digits.

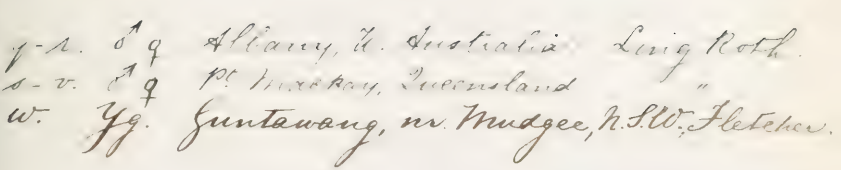
Australia.

a. ♂.	Port Essington.	(Type of *Discoglossus ornatus*.)
b–d. ♂ ♀.	Port Denison.	
*e–g**. ♂ ♀.	Port Denison.	G. Krefft, Esq. [P.].
h–l. ♀ & hgr.	Cape York.	
m. ♂.	N. Australia.	J. R. Elsey, Esq. [P.].
n–o. ♀.	Peak Downs.	Mus. Godeffroy.
p. ♂.	Clarence River.	G. Krefft Coll. (Type of *Platyplectrum marmoratum*.)

20. CRYPTOTIS.

Cryptotis, *Günth. Ann. & Mag. N. H.* (3) xi. 1863, p. 27; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

* The female has on the breast two cicatrices which are evidently caused by the thumbs of the male; this proves that the male seizes the female under the axillæ, and not round the waist as in *Pelobatidæ* and *Bombinatoridæ*, with which *Limnodynastes* bears great external resemblance.


y-r. ♂♀ Albany, W. Australia Lieut Roth.
s-v. ♂♀ Pt Mackay, Queensland "
w. Yg. Guntawang, nr. Mudgee, N.S.W. Fletcher.

Phaneroti's fletcheri Blgr.
a. ♀ Lismore, Richmond R., N. S. Wales.
Fletcher. (Type).

Pupil horizontal. Tongue suboval, entire and free behind. Vomerine teeth. Tympanum hidden. Fingers and toes free, the tips not dilated. Outer metatarsals united. Omosternum rudimentary; sternum a cartilaginous plate. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges simple.

Australia.

1. Cryptotis brevis.

Cryptotis brevis, *Günth. Ann. & Mag. N. H.* (3) xi. p. 27, pl. 4. f. B; *Steindachn. Novara, Amph.* p. 30; *Keferst. Arch. f. Naturg.* 1868, p. 268.

Vomerine teeth in two small groups behind the choanæ. Head large in the male, moderate in the female; two long tooth-like processes in front of the lower jaw in the former; these processes indistinct in the latter. Snout rounded, longer than the orbital diameter; canthus rostralis indistinct; nostril nearer the eye than the tip of the snout: interorbital space broader than the upper eyelid. Fingers moderate, first shorter than second; in the female the two inner fringed on their sides; toes moderate, slightly fringed; subarticular tubercles well developed: a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the angle of the mouth. Skin smooth, or slightly tubercular on the back. Olive-brown above, spotted with darker; a large dark spot between the eyes; a dark streak from the tip of the snout to the eye; limbs cross-barred; lower surfaces black- and white-marbled. Male with a subgular vocal sac.

Australia.

a, *b*. ♂.	Clarence River.	G. Krefft, Esq. [C.]. (Types.)
c. ♂.	Macquarie River.	G. Krefft, Esq. [C.].
d. Many sp.: ♂, ♀, hgr., & yg.	Macquarie River.	G. Krefft, Esq. [P.].

21. CRINIA.

Crinia, *Tschudi, Batr.* p. 78; *Cope, Nat. Hist. Rev.* 1865, p. 114, *and Journ. Ac. Philad.* (2) vi. 1866, p. 95.
Cystignathus, sp., *Dum. & Bibr.* viii. p. 392; *Günth. Cat.* p. 26.
Ranidella, *Girard, Proc. Ac. Philad.* 1853, p. 421.
Pterophrynus, *Lütken, Vidensk. Meddel.* 1862, p. 302.
Camariolius, *Peters, Mon. Berl. Ac.* 1863, p. 236.

Pupil horizontal. Tongue elliptic, entire, and free behind. Vomerine teeth very slightly developed or absent. Tympanum slightly distinct or hidden, or absent. Fingers and toes free, not dilated at the tips. Outer metatarsals united. Omosternum cartilaginous; sternum narrow, weak, cartilaginous. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges simple.

Australia.

Synopsis of the Species.

I. Lower surfaces granulate.

Tympanum slightly distinct; belly immaculate; loins and sides of thighs carmine 1. *georgiana*, p. 264.
Tympanum quite hidden; belly dark spotted or marbled ..... 2. *signifera*, p. 265.

II. Lower surfaces smooth.

Subarticular tubercles of fingers and toes and metatarsal tubercles very distinct .. 3. *tasmaniensis*, p. 266.
Subarticular and metatarsal tubercles indistinct; toes not fringed ..... 4. *lævis*, p. 266.

1. Crinia georgiana.

Cystignathus georgiana, *Günth. Cat.* p. 30.
Crinia georgiana, *(Bibr.) Tschudi, Batr.* p. 78; *Keferst, Götting. Nachr.* 1867, p. 347, *and Arch. f. Naturg.* 1868, p. 263.
Cystignathus georgianus, *Dum. & Bibr.* p. 416.
? Crinia ignita, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Pterophryne georgiana, *Günth. Ann. & Mag. N. H.* (3) xx. p. 53.

Vomerine teeth in two very small, indistinct groups behind the choanæ, seldom missing. Snout rounded, a little longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid: tympanum generally slightly distinct. First finger a little shorter than second: toes not or but slightly fringed: subarticular tubercles well developed; two small metatarsal tubercles; a very distinct tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the shoulder and the eye. Lower surfaces granulate. Back with small warts. Brownish or pinkish above, marbled with darker: loins, front and hinder side of thighs and inner side of tibiæ carmine. Male with a subgular vocal sac.

Australia.

a. ♀.	King George's Sound.	G. Krefft, Esq. [P.].
b. Several spec.: ♂, ♀, & her.	Sydney.	
c-d. *e*. ♂ ♀.	Port Essington.	Dr. Fleming [P.].
f. ♀.	Australia.	Dr. A. Günther [P.].
g-h. ♀.	Australia.	G. Krefft, Esq. [P.].

Var. stolata.

Cystignathus georgianus, *Bell, Zool. Beagle, Rept.* pl. 16. f. 4.
Crinia stolata, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 201.

Back with strong dermal folds—one from each upper eyelid along the back, approaching the other at scapulæ; another from the posterior angle of the eye to the side; two converging on parietal regions and one on the middle of the snout. Middle of the back

dark brown; a broad dorso-lateral pinkish band, dark margined below; groin and hinder side of thighs carmine.

i–k. ♀ & yg.	King George's Sound.	G. Krefft, Esq. [P.].
l. ♂.	Port Essington.	Dr. Fleming [P.].
m. ♀.	Australia.	C. Darwin, Esq. [P.].
n–q. ♀.	Australia.	G. Krefft, Esq. [P].

VAR. **affinis.**

Pterophrynus affinis, *Günth. Proc. Zool. Soc.* 1864, p. 47, pl. 7. f. 21.

Skin quite smooth above; a dark lateral stripe.

r. ♀.	W. Australia.	Hr. Dämel [C.].

2. Crinia signifera.

Crinia (Ranidella) signifera, *Girard, Proc. Ac. Philad.* 1853, p. 422; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 203.
Pterophrynus verrucosus, *Reinh. & Lütk. Vidensk. Meddel.* 1862, p. 302, pl. 1. f. 4.
—— varius, *Steindachn. Novara, Amph.* p. 31, pl. 2. f. 1–6.
—— fasciatus, *Steindachn. l. c.* p. 31, pl. 5. f. 3–4.
Crinia stictiventris, *Cope, l. c.* p. 202.
—— georgiana, var. varia, *Keferst. Götting. Nachr.* 1867, p. 348.
—— verrucosa, *Günth. Proc. Zool. Soc.* 1868, p. 478.
—— fasciata, *Günth. l. c.*
—— varia, *Keferst. Arch. f. Naturg.* 1868, p. 264, pl. 6. f. 11–13.

Vomerine teeth none. Snout rounded, as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum quite hidden. First finger shorter than second; toes fringed; subarticular tubercles moderate; two small metatarsal tubercles; a slight tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the temporal region. Upper surfaces warty, the warts often confluent into longitudinal lines on the back; lower surfaces granulate. Olive above, marbled or longitudinally striped with darker; a dark triangular spot between the eyes; a light spot above the vent; lower surfaces more or less marbled with brown. Male with the throat blackish, and a subgular vocal sac.

Australia.

a. ♀.	Sydney.	
b–d. ♀.	Sydney.	G. Krefft, Esq. [P.].
e–h. ♀.	Sydney.	G. Krefft, Esq. [P.]. (As *Cystignathus sydneyensis.*)
i–l. ♀ & hgr.	Abrolhos.	Dr. A. Günther [P.].
m. ♀.	W. Australia.	
n–p ♂ ♀.	Australia.	C. Darwin, Esq. [P.].
q. ♂.	Australia.	Earl of Derby [P.].

3. Crinia tasmaniensis.

Pterophrynus tasmaniensis, *Günth. Proc. Zool. Soc.* 1864, p. 48, pl. 7. f. 3, *and Ann. & Mag. N. H.* (3) xiv. p. 313.
Crinia tasmaniensis, *Keferst. Arch. f. Naturg.* 1868, p. 265.

Vomerine teeth none. Snout rounded, slightly longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum quite hidden. First finger shorter than second; toes fringed: subarticular tubercles moderate; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanic region. Upper and lower surfaces smooth. Upper parts dark brown, with a more or less distinct broad reddish-olive band running from behind the eye towards the loin; lower parts beautifully rose-coloured, largely marbled with black; hinder side of thighs black. Male with a subgular vocal sac.

Tasmania.

a. Several spec., ♂ ♀. Tasmania. (Types.)

4. Crinia lævis.

Pterophrynus lævis, *Günth. Proc. Zool. Soc.* 1864, p. 48, pl. 7. f. 3, *and Ann. & Mag. N. H.* (3) xiv. p. 314.
Crinia lævis, *Keferst. Arch. f. Naturg.* 1868, p. 265.

Vomerine teeth none. Snout rounded, a little longer than the orbital diameter; nostril a little nearer the eye than the tip of the snout; interorbital space broader than the upper eyelid; tympanum quite hidden. First finger very short; toes not fringed; subarticular and metatarsal tubercles indistinct; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Upper and lower surfaces smooth. Brownish olive above, with small scattered yellow spots; lower surfaces spotted with brown.

Tasmania.

a. ♀. Tasmania. Dr. Milligan. (Type.)

Camariolius varius, Peters, Mon. Berl. Ac. 1863, p. 236.—Under this name Prof. Peters appears to have confounded two species. Thus, he says, "Unterseite glatt oder mit dichtgedrängten Warzen an Bauch und Brust." Mr. Cope retains the name *Crinia varia* for the smooth-bellied form, and he justly observes that the presence or absence of granules on the lower surfaces must be of specific importance and not a sexual character, as believed by Dr. Steindachner. In this I perfectly agree with Mr. Cope, as I have seen male and female of *C. georgiana* and *signifera*.

Peters's smooth-bellied specimens are perhaps identical with *C. tasmaniensis*, those with granulate belly with *C. signifera*. But the description is too vague to permit an identification with these species.

a. ♀ *Crinia victoriana*, Blgr.
Warragul, Gippsland, Victoria
(Type) Fletcher.

b. ♀ Ballarat, Victoria. Fletcher
(Type of *C. froggatti*, Fletch.)

i-k. ♂	Sydney	Fletcher
l-m. ♂♀	Barrawang.	"
n-o. ♀	Bogan R; Dandaloo.	"

22. HYPEROLIA.

Uperoleia, *Gray, Grey's W. Austr.* p. 448; *Günth. Cat.* p. 39.
Hyperolia, *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Pupil erect. Tongue elliptic, entire, and free behind. Vomerine teeth none. Tympanum hidden. Fingers and toes free, the tips not dilated. Outer metatarsals united. Omosternum rudimentary; sternum small, cartilaginous. Diapophyses of sacral vertebra slightly dilated. Terminal phalanges simple.
Australia.

1. Hyperolia marmorata.

Uperoleia marmorata, *Günth. Cat.* p. 39.
Uperoleia marmorata, *Gray, Grey's W. Austr.* p. 448; *Steindachn. Novara, Amph.* p. 33; *Keferst. Götting. Nachr.* 1867, p. 349, *and Arch. f. Naturg.* 1868, p. 270, pl. vi. f. 14.

Habit stout. Snout short, rounded, with indistinct canthus rostralis; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid. Fingers and toes blunt; first finger shorter than second: subarticular tubercles well developed; two subequal, oval, metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Upper surfaces minutely tubercular; a large parotoid; lower surfaces smooth. Brownish or olive above, marbled with darker; a dark triangular spot between the eyes; frequently a large white spot on the loin, and another on the hinder side of the thigh; beneath, brownish or greyish, spotted with darker. Male with a subgular vocal sac.
Australia.

a–d. ♀ & hgr.	Sydney.	G. Krefft, Esq. [C.].
e. ♂.	Sydney.	
f. ♀.	Sydney.	Dr. A. Günther [P.].
g–h. ♀.	Queensland.	G. Krefft, Esq. [P.].
i. ♂.	W. Australia.	(Type.)
k. ♂.	Cape York.	

23. CHIROLEPTES.

Chiroleptes, *Günth. Cat.* p. 34; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1867, p. 93.
Phractops, *Peters, Mon. Berl. Ac.* 1867, p. 30.
Cyclorana, *Steindachn. Novara, Amph.* p. 29.

Pupil vertical. Tongue subcircular or elliptic, entire, or slightly nicked, and free behind. Vomerine teeth. Ear perfectly developed. Fingers free, first opposite to the others; toes more or less webbed; tips of fingers and toes not dilated; inner metatarsal tubercle oval,

compressed, generally shovel-shaped. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra slightly dilated.

Australia.

Synopsis of the Species.

I. Toes entirely webbed; tympanum indistinct.

Tongue entire ..... 1. *platycephalus*, p. 268.

II. Toes not more than half webbed; tympanum very distinct.

1. Inner metatarsal tubercle large, shovel-shaped; no outer tubercle.

Tongue subcircular; nostril equally distant from the eye and the tip of the snout; toes hardly one-third webbed .. 2. *brevipalmatus*, p. 269.

Tongue elliptic; nostril a little nearer the tip of the snout than the eye; toes not half webbed ..... 3. *brevipes*, p. 269.

Head large; snout twice as long as the greatest orbital diameter; toes nearly half webbed ..... 4. *australis*, p. 269.

Head moderate; snout not twice as long as the greatest orbital diameter; toes half webbed ..... 5. *alboguttatus*, p. 270.

2. Two metatarsal tubercles, the inner small, but little larger than the outer.

Tympanum close to the eye ..... 6. *inermis*, p. 271.

1. Chiroleptes platycephalus. (Plate XVII. fig. 4.)

Chiroleptes platycephalus, *Günth. Ann. & Mag. N. H.* (4) xi. p. 350.

Tongue subcircular, entire. Vomerine teeth in two groups between the choanæ. Head large; snout rounded, nearly twice as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum indistinct, three fourths the diameter of the eye. Fingers moderate, first much longer than second; toes short, entirely webbed; subarticular tubercles very small; inner metatarsal tubercle strong, shovel-like; a flat, rather indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. A few small tubercles on the back; belly minutely granular. Uniform greenish olive above; throat with a few small greenish spots.

Fort Bourke, Australia.

a. ♀. Fort Bourke. Sydney Mus. (Type.)

b. ♀ Euroka, Walgett, N.S.W. Fletcher.

2. Chiroleptes brevipalmatus. (Plate XVII. fig. 5.)

Chiroleptes brevipalmatus, *Günth. Journ. Mus. Godeffr.* xii. 1878, p. 47.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two straight series between the choanæ. Head moderate; snout rounded, not much longer than the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers moderate, first much longer than second; toes short, hardly one-third webbed; subarticular tubercles well developed; inner metatarsal tubercle oval, compressed, shovel-like; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin minutely granular above and beneath. Brownish olive above, with symmetrical brown markings, one of which is a large interocular spot; a dark streak from the tip of the snout through the eye and over the tympanum to the shoulder; a white vertebral line; hinder side of thighs not coloured. Male with a subgular vocal sac.

Australia.

a. ♂.	Fort Denison, Cape York.		
b. ♀.	Gayndah.	Godeffroy Mus.	Types.
c. ♀.	Peak Downs.	Godeffroy Mus.	

3. Chiroleptes brevipes.

Chiroleptes brevipes, *Peters, Mon. Berl. Ac.* 1871, p. 648.

Tongue elliptic, slightly nicked behind. Vomerine teeth in two oblique series between the choanæ. Head as long as broad; nostril a little nearer the tip of the snout than the eye; tympanum distinct, two thirds the diameter of the eye. Toes not half webbed; subarticular tubercles of fingers much stronger than of toes; a large, shovel-like, inner metatarsal tubercle; no outer tubercle. The hind limb being carried forwards along the body, the metatarsal tubercle reaches the nostril. Skin granular on the back and belly. Reddish brown above, spotted and marbled with black; a triangular black spot between the eyes; a black streak from the tip of the snout through the eye and over the tympanum to the shoulder; a white vertebral line; hinder side of thighs black.

Fort Bowen, Australia.

4. Chiroleptes australis.

Chiroleptes australis, *Günth. Cat.* p. 34.
Alytes australis, *Gray, Zool. Misc.* p. 56.
Phractops alutaceus, *Peters, Mon. Berl. Ac.* 1867, p. 30.
Cyclorana novæ hollandiæ, *Steindachn. Novara, Amph.* p. 29, pl. 2. f. 7–10.
Chiroleptes australis, *Günth. Zool. Rec.* iv. p. 145.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two strong, slightly oblique series between the choanæ. Head large; snout rounded, twice, or nearly twice, as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space grooved, as broad as the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers short, first much longer than second; toes short, nearly half webbed; subarticular tubercles well developed; a large, oval, compressed, inner metatarsal tubercle. The hind limb variable in length; being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum, the eye, or between the eye and the nostril. Skin smooth or shagreened above, with a few scattered flat warts, minutely granular beneath; a more or less distinct glandular lateral fold. Brown or olive above, uniform or marbled with darker; a dark streak from the tip of the snout through the eye and over the tympanum to the shoulder; throat spotted with brown. Male with a subgular vocal sac.

Australia.

a b. ♀ & yg.	Port Essington.	Mr. Gilbert's Coll. (Types.)
c. ♀.	Port Denison, N. Australia.	G. Krefft, Esq.
d, e. Hgr.	Port Denison, N. Australia.	
f, g, h. ♀, ♂, & yg.	Rockhampton, N. Australia.	
i. ♀.	Nicol Bay, N.W.C. Australia.	M. Du Boulay.
k. ♀.	Queensland.	Prof. A. M. Thomson [P.].
l. Skel., ♀.	Australia.	G. Krefft, Esq.

5. Chiroleptes alboguttatus. (Plate XVIII. fig. 1.)

Chiroleptes alboguttatus, *Günth. Ann. & Mag. N. H.* (3) xx. p. 54.

Tongue subcircular, slightly nicked behind. Vomerine teeth in two straight or slightly oblique series between the choanæ. Head moderate; snout subacuminate, not quite once and a half as long as the orbital diameter; nostril equally distant from the eye and the tip of the snout; interorbital space not quite as broad as the upper eyelid; tympanum very distinct, at least two thirds the diameter of the eye. Fingers moderate, first much longer than second; toes moderate, half webbed; subarticular tubercles moderate; inner metatarsal tubercle oval, compressed; no outer tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or the nostril. Skin smooth above, or with small warts on the back; a glandular lateral fold; belly minutely granular. Olive or brown above, indistinctly marbled with black; a light vertebral line; sides of the body and of the thighs blackish, with numerous round white spots; a dark streak from the tip of the snout through the eye and over the tympanum to the shoulders; throat and breast sometimes marbled with brown. Male with a

m. ♀ Port Darwin Buckland.

subgular vocal sac, and blackish rugosities on the inner side of the first digit during the breeding-season.

Australia.

a–b, c–d. ♀.	Port Denison, Cape York.	(Types.)
e. ♂.	Port Denison, Cape York.	G. Krefft, Esq.
f. ♂.	? Clarence River.	G. Krefft, Esq.

6. Chiroleptes inermis.

Chiroleptes inermis, *Peters, Mon. Berl. Ac.* 1867, p. 30.

Vomerine teeth in two small groups between the inner front edges of the choanæ. Snout rounded; tympanum distinct, two thirds the diameter of the eye, separated from the latter by a very narrow interspace. Two metatarsal tubercles, the inner small, but little larger than the outer. Upper surfaces with small scattered tubercles; belly minutely granular. Greyish brown above, with irregular dark spots; lips spotted; hinder side of thighs black- and white-spotted or marbled.

Rockhampton, N.E. Australia.

24. HELEIOPORUS.

Heleioporus, *Gray, Grey's Journ. W. Austral.* p. 447; *Günth. Cat.* p. 39; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Neobatrachus, *Peters, Mon. Berl. Ac.* 1863, p. 234; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 94.

Perialia, sp., *Gray, Eyre's Journ. Exped. Centr. Austral.* p. 407.

Pupil erect. Tongue subcircular, slightly nicked behind. Vomerine teeth. Tympanum concealed. Fingers free; toes more or less webbed, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous; sternum a semi-ossified plate. Sacral vertebra slightly dilated. Terminal phalanges simple.

Australia.

1. Heleioporus albopunctatus.

Heleioporus albo-punctatus, *Günth. Cat.* p. 39.

Heleioporus albo-punctatus, *Gray, Grey's Journ. W. Austr.* p. 447, pl. 1. f. 2; *Keferst. Arch. f. Naturg.* 1868, p. 269, pl. 5. f. 2–5.

Perialia eyrei, *Gray, Eyre's Journ. Exped. C. Austr.* i. p. 407, pl. 2. f. 3.

Vomerine teeth in a transverse interrupted series between the choanæ. Habit very stout. Snout rounded, without canthus rostralis; nostril equally distant from the eye and the tip of the snout; interorbital space narrower than the upper eyelid. Fingers blunt; first longer than second; toes short, blunt, hardly half webbed; subarticular tubercles, especially those of the fingers, well developed; inner metatarsal tubercle large, shovel-shaped. The hind limb

being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Skin smooth, shagreened on the head and back; a large parotoid, not conspicuous externally. Brownish with white rounded spots, or reddish-white marbled with brown; young, above olive with more or less conspicuous brown spots, and a dark streak from the tip of the snout to the eye. Male without vocal sac, with a conical tubercle on the inner side of the first finger.

Australia.

a. ♀.	Sydney.	G. Krefft, Esq. [P.].
b. ♀.	Swan River.	Mr. Gilbert.
c. ♂.	W. Australia.	(Type of *H. albo-punctatus*.)
d–g. Yg.	W. Australia.	(Types of *Perialia eyrei*.)
h. ♀.	N.W. Australia.	
i, k. ♀.	Port Essington.	Dr. Fleming [P.].

2. Heleioporus pictus.

Neobatrachus pictus, *Peters, Mon. Berl. Ac.* 1863, p. 235.

Toes two-thirds webbed. Skin of head and back with irregular flat warts: parotoids none. Olive above, marbled with darker; a dark streak from the tip of the snout to the eye; a light vertebral line; metatarsal shovel black. Otherwise as in *H. albopunctatus*.

Australia.

a. ♀.	Sandhurst, Victoria.	Col. Beddome [P.].
b. Hgr.	Ryalstone, N. S. Wales.	G. Krefft, Esq. [P.].

The type specimen of the following genus is unfortunately entirely decayed. That it was a Cystignathid there is no doubt, but beyond that it is not possible to say what were its affinities:—

Alsodes, Bell, Zool. Beagle, Rept. p. 41; Günth. Cat. p. 42.

"Head convex, crown smooth. Tongue acutely produced in front, rounded and free behind. Palatine teeth in two small close patches between the interior nostrils. Fingers four, short, webbed at the base (inner toe broad, fringed). Toes webbed to the third phalange." (*Bell.*) "Tympanum, cavum tympanicum, tuba eustachii, wanting; diapophysis of sacral vertebra appears to be a little dilated towards the end." (*Günther.*)

A. monticola, Bell, *l. c.* pl. 18. f. 3.—Island of Inchy, Chonos Archipelago.

The following genus evidently also belongs to this family, but the sternal apparatus not being known it is impossible to refer it to its proper place, though it appears to be most closely related to *Edalorhina*:—

Nattereria, Steindachn. Verh. zool.-bot. Ges. Wien, 1864, p. 279.

"Body elongate, raniform; head triangular, the forehead and

c. ♂ Urana, N. S. W. Fletcher.

= ♀ aludicola olfersii.

vertex flat; tongue large, oblong, thick, slightly emarginate behind, free in its posterior half. Maxillary teeth; palatine teeth none; parotoids strong, produced much beyond the tympanum; latter hardly distinct; openings of the eustachian tubes round, perfectly distinct. Fingers and toes free; two metatarsal tubercles, moderately developed. Diapophyses of sacral vertebra dilated, flat."

N. lateristriga, Steind. l. c. pl. 14. f. 2.—Brazil.

6. DENDROPHRYNISCIDÆ.

Dendrophryniscidæ, *Espada, Jorn. Sc. Lisb.* iii. 1870, p. 65.
Batrachophrynidæ, *Cope, Check-list N.-Amer. Batr. & Rept., Bull. U.S. Nat. Mus.* i. 1877.

Maxillary teeth none. Diapophyses of sacral vertebra not dilated.

This family is closely related to the preceding one, from which it differs only in the absence of maxillary teeth.

1. BATRACHOPHRYNUS.

Batrachophrynus, *Peters, Mon. Berl. Ac.* 1873, p. 411.

Pupil erect. Tongue large, circular, entirely adherent. Vomerine teeth none. No tympanum nor eustachian tubes. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. A cartilaginous omosternum; sternum a cartilaginous plate. Terminal phalanges simple.

Peru.

1. Batrachophrynus brachydactylus.

Batrachophrynus brachydactylus, *Peters, l. c.* p. 413, pl. 3. f. 4.

Head small, much depressed; snout short, rounded, without canthus rostralis; eyes obliquely directed upwards; upper eyelids narrow. Fingers rather short, first and second equal; toes moderately long, two-thirds webbed; subarticular tubercles of fingers and toes very small; two small, scarcely prominent metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the tip of the snout in males, the eye in females. Skin perfectly smooth. Olive above, spotted with darker. Male without vocal sac.

Peru.

a–d. ♂ ♀. High Peru. Prof. Taczanowski [P.].

2. Batrachophrynus macrostomus.

Batrachophrynus macrostomus, *Peters, l. c.* p. 412, pl. 2. f. 1.

Differs from the preceding species in the larger head, longer ante-

rior limbs (extended backwards, they reach beyond the body), the absence of an outer metatarsal tubercle, the completely webbed toes, and larger size.

Peru.

2. DENDROPHRYNISCUS.

Dendrophryniscus, *Espada, Jorn. Sc. Lisb.* iii. p. 65.

Pupil ——? Tongue oblong, entire, free behind. Vomerine teeth none. Tympanum hidden. Fingers and toes webbed at the base, the tips dilated. No omosternum; sternum with a bony style.

Brazil.

1. Dendrophryniscus brevipollicatus.

Dendrophryniscus brevipollicatus, *Espada, l. c., and Viaj. Pacif., Vert.* pl. 6. f. 3.

Head depressed, triangular; snout produced, truncate. First finger rudimentary. Skin minutely tubercular. Reddish brown above; limbs with dark cross bands; beneath light brown, belly whitish.

Rio Janeiro.

7. BUFONIDÆ.

Brachycephalidæ, part., Engystomatidæ, part., Bufonidæ, part., Rhinophrynidæ, *Günther, Cat. Batr. Sal.*

Rhinophrynidæ, part., Brachymeridæ, part., Bufonidæ, *Cope, Nat. Hist. Rev.* 1865.

Rhinophrynidæ, Phryniscidæ, part., Bufonidæ, part., Engystomidæ, part., *Mivart, Proc. Zool. Soc.* 1869.

Rhinophrynidæ and Bufonidæ, *Cope, Check-list N.-Amer. Batr. & Rept., Bull. U.S. Nat. Mus.* i. 1877.

Maxillary teeth none; diapophyses of sacral vertebra dilated.

The first two genera of this family approach the *Cystignathidæ*—*Engystomops* resembling *Paludicola*, and *Pseudophryne* resembling *Crinia*; whilst the last two, viz. *Myobatrachus* and *Rhinophrynus*, approach the *Engystomatidæ*.

The omosternum is generally absent: if present, it is reduced to a narrow cartilage. The sternum is usually a cartilaginous plate, which in a few cases is ossified along its centre; in *Engystomops* there is a well-defined bony style supporting a cartilaginous disk.

The vertebræ are procœlian and without ribs. The diapophyses of the sacral vertebra are more or less dilated, but never to such a degree as in the *Pelobatidæ*. The coccyx is attached to two condyles.

A fronto-parietal fontanelle is present in *Engystomops*, *Pseudophryne*, and a few species of *Bufo*; and in a few other species of the latter genus the derm is completely involved in the cranial ossification.

In two genera the pupil is erect.

The distal phalanges are simply obtuse, or T-shaped.

Eupemphix nattereri, Steind.
a-b. ♀ Paraguay. Linnæa

Eupemphix nana, Blgr.
a-b. ♂♀ Lages, Sta. Catharina. Michaëlis (Types)
c. ♀ Sta Catharina "

Eupemphix trinitatis, Blgr.
a-d. ♂♀. Trinidad. Hart. (Types)
e. Several specs, ♂♀ " "

The *Bufonidæ* include terrestrial, burrowing, thoroughly aquatic (*Nectes*), and apparently arboreal (*Nectophryne*) types; *Rhinophrynus* is a true ant-eater, as are several forms of *Engystomatidæ*.

Synopsis of the Genera.

Fingers free, toes nearly free; sternum with a well-ossified style. 1. **Engystomops**, p. 275.

Fingers and toes free; sternum a weak cartilage. 2. **Pseudophryne**, p. 277.

Fingers and toes more or less webbed, the tips dilated into regular disks; sternum cartilaginous ..... 3. **Nectophryne**, p. 279.

Fingers free, toes more or less webbed; sternum either cartilaginous, or with a semiossified style..... 4. **Bufo**, p. 281.

Fingers free, toes very broadly webbed; nostrils directed upwards. 5. **Nectes**, p. 327.

Vomerine teeth; a dermal ridge between the choanæ; sternum rudimentary..... 6. **Notaden**, p. 328.

Pupil erect; fingers and toes free; sternum ossified on the median line ..... 7. **Myobatrachus**, p. 328.

Pupil erect; tongue free in front; sternum rudimentary. 8. **Rhinophrynus**, p. 329.

1. ENGYSTOMOPS. = *Eupemphix.*

Paludicola, (*non Wagler*) *Cope, Proc. Ac. Philad.* 1864, p. 180.
Engystomops, *Espada, An. Soc. Esp.* i. 1872, p. 86.
Microphryne, *Peters, Mon. Berl. Ac.* 1873, p. 616.
Peralaimos, *Espada, Viaj. Pacif., Vert.* p. 163.

Pupil horizontal. Tongue elliptic, entire and free behind. Vomerine teeth none. Tympanum distinct or hidden. Fingers free, toes nearly free, the tips simply swollen. Outer metatarsals united. A cartilaginous omosternum; sternum with a bony style. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple or anchor-shaped.

Tropical America.

Synopsis of the Species.

Tympanum hidden: tibio-tarsal articulation not reaching the eye ..... 1. *pustulosus*, p. 275.

Tympanum more or less distinct; tibio-tarsal articulation reaching the eye..... 2. *stentor*, p. 276.

Tympanum very distinct, half the width of the eye; distal phalanges anchor-shaped.. 3. *petersii*, p. 276.

1. Engystomops pustulosus.

Paludicola pustulosa, *Cope, Proc. Ac. Philad.* 1864, p. 180.
Microphryne pustulosa, *Cope, Journ. Ac. Philad.* (n. s.) viii. p. 155.

Head small; snout prominent; interorbital space not quite so broad as the upper eyelid; tympanum hidden. Fingers slender, first not extending beyond second; toes moderate, quite free; tips of fingers and toes slightly swollen; subarticular tubercles very prominent; two small metatarsal tubercles; a conical tubercle on the middle of the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches in the middle between the shoulder and the eye. Upper surfaces covered with very prominent warts; parotoids none; lower surfaces smooth, except under the thighs. Greyish olive above, with darker markings; limbs cross-barred; belly spotted with blackish; throat and breast greyish, with a light median line. (Male with a large subgular vocal sac.)

C. America; Colombia.

a. ♀.	Tehuantepec.	Brussels Museum [E.].

2. Engystomops stentor.

Bufo stentor, *Espada, An. Soc. Esp.* i. p. 84.
? Bufo (Microphryne) pustulosus, *Peters, Mon. Berl. Ac.* 1873, p. 616.
Peralaimos stentor, *Espada, Viaj. Pacif., Vert.* p. 163, pl. 2. f. 4.

Head small; snout prominent; interorbital space as broad as the upper eyelid; tympanum more or less distinct, three fourths the width of the eye. Fingers slender, first extending beyond second; toes slender, with a rudiment of web; tips of fingers and toes swollen; subarticular tubercles very prominent; two small metatarsal tubercles; a conical tubercle on the middle of the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Upper surfaces covered with small warts; a flat, more or less indistinct parotoid; lower surfaces smooth, except under the thighs. Blackish brown above, the warts lighter; a few brown bands across the limbs; belly and lower surface of limbs largely marbled with blackish brown; throat and chest brown, with a light median line. Male with a large subgular vocal sac.

C. America; Colombia; Ecuador.

a, *b*. ♂.	Sarayacu, Ecuador.	Mr. Buckley [C.].
c. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].

3. Engystomops petersii.

Engystomops petersi, *Espada, An. Soc. Esp.* i. p. 86, *and Viaj. Pacif., Vert.* p. 160, pl. 2. f. 3.

Head very small; snout prominent; tympanum very distinct, half the width of the eye. Fingers slender, first not extending beyond second; toes slender, with a rudiment of web; tips of fingers and toes swollen; subarticular tubercles very prominent; two small metatarsal tubercles; a conical tubercle on the middle of the inner

b. c. ♀ Tehuantepec. Fischer.

d. ♀ Panama. Hérow. Royer.

edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the anterior angle of the eye. Upper surfaces with smooth flat warts; a flat parotoid. Terminal phalanges anchor-shaped.

E. Ecuador.

2. PSEUDOPHRYNE.

Pseudophryne, *Fitzing. Syst. Rept.* i. p. 32; *Günth. Cat.* p. 45; *Cope, Nat. Hist. Rev.* 1865, p. 103.
Phryniscus, sp., *Dum. & Bibr.* viii. p. 722.

Pupil horizontal. Tongue elliptical, entire and free behind. Vomerine teeth none. No tympanum. Fingers and toes free, the tips not dilated. Outer metatarsals united. No omosternum; sternum cartilaginous. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Australia.

Synopsis of the Species.

I. One or two small rounded metatarsal tubercles; tip of longest toe reaching beyond the eye.
  Blackish brown above; forehead yellowish. 1. *australis*, p. 277.
  Brown or olive above, variegated with darker ..... 2. *bibronii*, p. 278.
  Yellowish brown above; sides blackish.. 3. *coriacea*, p. 278.
II. Two large, oval, compressed metatarsal tubercles; tip of longest toe not reaching beyond the eye ..... 4. *quentheri*, p. 279.

1. Pseudophryne australis.

Pseudophryne australis, *Günth. Cat.* p. 45.
Bombinator australis, *Gray, Proc. Zool. Soc.* 1835, p. 57; *Eyre, Journ. Exped. C. Austr.* i. *App.* p. 407, pl. 1. f. 1.
Phryniscus albifrons, *Dum. & Bibr.* ix. p. 413, pl. 100. f. 3.
Pseudophryne australis, *Keferst. Arch. f. Naturg.* 1868, p. 271.

Snout rounded, a little longer than the orbital diameter, without canthus rostralis; interorbital space as broad as the upper eyelid. Fingers short, first much shorter than second; toes short, quite free, without even a rudiment of fringe; subarticular tubercles not very prominent; a small, not very prominent, rounded inner metatarsal tubercle; outer tubercle none or very indistinct. The hind limb being carried forwards along the body, the tip of the longest toe always reaches beyond the eye; the tibio-tarsal articulation reaches the shoulder in the male, not so far in the female. Skin smooth, or with very small, round, flat warts on the back. Blackish brown above; forehead and crown, a streak along the coccyx, a spot on the upper arm, and another on the thigh yellowish; beneath blackish, with large yellowish spots. Male with an internal

subgular vocal sac, and a flat oval gland on the hinder side of each thigh.

Australia.

a. ♂.	Swan River.	J. Wright, Esq. [P.] (Type).
b, *c*. ♀.	Sydney.	
d. ♂.	Australia.	G. Krefft, Esq. [P.].
e. ♀.	Australia.	

2. Pseudophryne bibronii.

Pseudophryne bibronii, *Günth. Cat.* p. 46.
Phryniscus australis, *Dum. & Bibr.* viii. p. 725, pl. 100. f. 2 & 4.
Pseudophryne bibronii, *Steindachn. Novara, Amph.* p. 34, pl. 5. f. 1 & 2; *Keferst. Arch. f. Naturg.* 1868, p. 271.

Two small metatarsal tubercles. Upper surfaces with small warts. Brown or olive above, variegated with darker; generally a more or less distinct pink vertebral line, and a yellowish spot on the upper arm; a light line, or two large yellowish spots, on the hinder side of the thighs; beneath marbled with brown and yellowish. A flat oval gland on the hinder side of each thigh is generally, though not always, present in the male. Otherwise as in *P. australis*.

Australia.

a. ♀.	Cape York.	Hr. Dämel [C.].
b. ♀.	Gayndah.	Godeffroy Mus.
c–d. ♀.	Brisbane.	G. Krefft, Esq. [P.].
e–i. ♂ ♀.	Clarence River.	G. Krefft, Esq. [P.].
k. Many spec., ♂ ♀.	Sandhurst, Victoria.	Col. Beddome [C.].
l. Many spec., ♂ ♀.	Queensland.	G. Krefft, Esq. [P.].
	(Two of the specimens bear larvæ of the Dipterous insect *Batrachomyia*. *Cf.* Krefft, Trans. Entom. Soc. N. S. Wales, i. 1864, p. 100.)	
m–n. ♂.	Sydney.	
o. ♂.	Sydney.	Mr. W. G. Cutter [P.].

3. Pseudophryne coriacea.

Pseudophryne, sp. n., *Krefft, Monthly Notic. Roy. Soc. Tasman.* 1865, p. 17.
—— coriacea, *Keferst. Arch. f. Naturg.* 1868, p. 272, pl. 6. f. 15.

Two small metatarsal tubercles, the outer sometimes very indistinct. Skin nearly smooth above, strongly glandular on the sides. Yellowish brown above: sides of head and body blackish, the two colours sharply defined; lower surfaces black- and yellowish-marbled. No gland on the hinder side of the thigh.

E. Australia.

a–b. ♂ ♀.	Lake Macquarie.	G. Krefft, Esq. [P.].

This form, as well as *P. bibronii*, may prove to be mere varieties of *P. australis*.

p. Several spees. ♂ ♀ eggs. Parramatta, N. S. Wales. Krefft.

c. ♀. Lismore, Richmond R., N. S. W. Fletcher.

c. k. ♂♀ Chapman R., W. Australia. Saunders.

4. Pseudophryne guentheri. (PLATE XVIII. fig. 2.)

Pseudophryne bibronii, part., *Günth. Cat.* p. 137.

Differs from the preceding in the following points:—Metatarsal tubercles two, large, oval, compressed. Hind limb very short, the tip of the longest toe not reaching beyond the anterior corner of the eye. Upper surfaces with prominent smooth warts, some of which are confluent into straight or curved lines on the back. Brown or olive above; forehead and a few large markings on the back lighter. Beneath whitish, immaculate, slightly spotted or delicately marbled with brown. Male with a very large flat, oval, lumbar gland, and a rather indistinct large subcircular parotoid.

Australia.

a. ♂.	Swan River.	Sir A. Smith [P.].
b. ♀.	N.W. Australia.	
c, *d*. ♀.	Australia.	

3. NECTOPHRYNE.

Nectophryne, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 202.
Pedostibes, *Günth. Proc. Zool. Soc.* 1875, p. 576.

Pupil horizontal. Tongue elliptical, entire, free behind. Palate smooth. Tympanum distinct or absent. Fingers and toes webbed, the tips dilated into regular disks. Outer metatarsals united. No omosternum; sternum cartilaginous. Diapophyses of sacral vertebra strongly dilated. Terminal phalanges T-shaped.

West Africa; East Indies.

Synopsis of the Species.

Fingers entirely webbed ..... 1. *afra*, p. 279.
Fingers one-third webbed; tympanum two thirds the width of the eye ..... 2. *guentheri*, p. 280.
Fingers webbed at the base; tympanum one third the width of the eye ..... 3. *tuberculosa*, p. 280.
Fingers webbed at the base; no metatarsal tubercles ..... 4. *sundana*, p. 281.

1. Nectophryne afra.

Nectophryne afra, *Buchh. & Peters, l. c.* pl. 2. f. 5.

Snout short, projecting, truncate; canthus rostralis rounded; loreal region sloping obliquely inwards and downwards; no tympanum. First finger shorter than second; fingers and toes webbed to the tips, which are swollen; two flat metatarsal tubercles. Upper surfaces with scattered small tubercles; belly and inferior surface of thighs granulate. Olive-green; a cross band between the eyes

and on the sacral region; between these a large irregular spot; limbs with dark spots.

Cameroons, W. Africa.

2. Nectophryne guentheri. (Plate XVIII. fig. 3.)

Bufo leptopus, juv., *Günth. Proc. Zool. Soc.* 1872, p. 598.

Habit slender. Head small; snout obliquely truncate; loreal region vertical; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the width of the eye. Fore limb very slender, as long as the distance between vent and tympanum. Fingers moderate, much depressed, one-third webbed, the web extending as a margin to their tips, which are broad and truncated; first finger half the length of the second; toes rather short, the web extending to their tips, but deeply emarginate; the tips like those of the fingers; two small, flat, metatarsal tubercles; no tarsal fold; subarticular tubercles of fingers and toes small. The hind limb being carried forwards along the body, the metatarsal tubercle marks the tip of the snout. Skin covered with small tubercles. Olive-brown above, minutely spotted with blackish; lower surfaces yellowish, the throat and belly spotted with greyish brown.

Borneo.

a. Hgr. Matang. (Type of *Bufo leptopus*, juv.)

3. Nectophryne tuberculosa.

Pedostibes tuberculosus, *Günth. Proc. Zool. Soc.* 1875, p. 576, pl. 64. f. C.

Habit moderately slender. Head moderate; snout subacuminate; loreal region vertical; interorbital space as broad as the upper eyelid; tympanum distinct, one third the width of the eye. Fingers moderate, depressed, webbed at the base, first half the length of second; toes moderate, nearly entirely webbed; tips of fingers and toes dilated into broad truncated disks, those of toes rather smaller than those of fingers; subarticular tubercles small; two small, flat, metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the metatarsal tubercle reaches between the eye and the tip of the snout. Skin of the upper parts tubercular, the largest tubercles being arranged along each side of the back. Brownish grey above, sides darker; a white band from below the eye to the axil; another white longitudinal band in the lumbar region; beneath dark-spotted. Male with a subgular vocal sac.

Malabar.

a–b. ♂. Malabar. Col. Beddome [C.]. (Types.)

Nectophryne misera, Mocq.

a. Several spec. Paka Paka, King Balow 10,000 ft. Everett.

b. Yg. Borneo. Bock.
c Yg Singapore Ridley.
d. f. Ag. Sirhassen, Natuna Is. Everett.

Nectophryne hosii, Blgr.

a. ♂ Mt. Dulit, Borneo. Hose (Type)
b-d. ♂♀ Sarawak. Everett.
e. ♀ Skar R., Sarawak. Hose.

Nectophryne signata, Blgr.

a-b. Rabong Mt., Kapuas district, Dutch Borneo. Everett (Types)

Nectophryne macrotis, Blgr.

a. ♀ Skar R., Sarawak. Hose (Type)

4. Nectophryne? sundana.

Calohyla sundana, *Peters, Mon. Berl. Ac.* 1867, p. 35.

Fingers webbed at the base, the tips dilated into broad truncated disks; toes webbed to the base of last phalange; no metatarsal tubercles. Body with scattered small tubercles; belly granulate. Uniform brown, above indistinctly spotted with black, beneath spotted with white.

Borneo.

4. BUFO*.

Bufo, sp., *Laur. Syn. Rept.* p. 25.
Bufo, *Wagl. Syst. Amph.* p. 206; *Tschudi, Batr.* p. 88; *Dum. & Bibr.* viii. p. 662; *Günth. Cat.* p. 55; *Cope, Nat. Hist. Rev.* 1865, p. 102.
Oxyrhynchus, *Spix, Spec. Nov. Test. Ran.* p. 49; *Espada, Viaj. Pacif., Vert.* p. 170.
Otilophus, *Cuv. R. A.*; *Tschudi, Batr.* p. 89; *Günth. Cat.* p. 69; *Cope, l. c.*
Hylaplesia, sp., *Boie, Isis*, 1827, p. 294.
Chaunus, sp., *Wagl. Isis*, 1828, p. 744.
Phryne, (*Oken*) *Fitzing. Syst. Rept.* i. p. 32.
Chilophryne, *Fitzing. l. c.*; *Cope, Proc. Ac. Philad.* 1862, p. 357.
Phrynoidis, *Fitzing. l. c.*; *Cope, l. c., and Nat. Hist. Rev.* 1865, p. 102.
Peltaphryne, *Fitzing. l. c.*; *Cope, ll. cc.*
Anaxyrus, *Tschudi, Faun. Per., Herp.* p. 78.
Schismaderma, *Smith, Ill. S. Afr., Rept., App.* p. 28; *Günth. l. c.* p. 138; *Cope, l. c.*
Adenomus, *Cope, Proc. Ac. Philad.* 1860, p. 371.
Rhæbo, *Cope, cod. loc.* 1862, p. 357, *and Nat. Hist. Rev.* 1865, p. 102.
Epidalea, *Cope, Nat. Hist. Rev.* 1865, p. 102.
Otaspis, *Cope, Proc. Ac. Philad.* 1868, p. 312.
Scutiger, *Theobald, Cat. Rept. As. Soc. Mus.* 1868, p. 83.
Nannophryne, *Günth. Proc. Zool. Soc.* 1870, p. 402.
Ansonia, *Stoliczka, Proc. As. Soc.* 1870, p. 152.

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* 1. *Bufo horribilis*, Wiegm. Isis, 1833, p. 654; Peters, Mon. Berl. Ac. 1863, p. 81.—Mexico.
2. *Bufo cristatus*, Wiegm. l. c. p. 660; Peters, l. c.—Mexico.
3. *Bufo marmoratus*, Wiegm. l. c. p. 661; Peters, l. c.—Mexico.
4. *Bufo erythronotus*, Holbr. N.-Amer. Herp. v. pl. 2.—U. States.
5. *Bufo punctatus*, Baird & Gir. Proc. Ac. Philad. 1852, p. 173.—Rio Grande des Norte. *See p. 324.*
6. *Bufo alvarius*, Girard, U.S. Mex. Bound. Surv. ii., Rept. p. 26, pl. 41. f. 1–6.—Valley of Gila and Colorado.
7. *Bufo melanogaster*, Hallow. Proc. Ac. Philad. 1860, p. 480.—Nicaragua.
~~8. *Bufo stomaticus*, Lütk. Vidensk. Meddel. 1862, p. 305.~~
9. *Bufo microscaphus*, Cope, Proc. Ac. Philad. 1866, p. 301.—Colorado.
~~10. *Bufo funereus*, Bocage, Journ. Sc. Lisb. 1866, p. 77. Duque de Bragance, Angola.~~
~~11. *Bufo mendocinus*, Philippi, Arch. f. Naturg. 1869, p. 44.—Mendoza.~~
12. *Ollotis cærulescens*, Cope, Journ. Ac. Philad. (n. s.) viii. part 2. p. 98, pl. 23. f. 3.—Costa Rica.
13. *Bufo pictus*, Cope, in Yarrow's Rep. p. 522, pl. 25. f. 4, 5

Cranopsis, *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, 1876, p. 96.
Crepidius, *Cope, l. c.* p. 97.
Ollotis, *Cope, l. c.* p. 98.
Dromoplectrus, *Camerano, Atti Acc. Tor.* xiv. 1879, p. 882.

Pupil horizontal. Tongue elliptic or pyriform, entire and free behind. Vomerine teeth none. Tympanum distinct or hidden, seldom absent. Fingers free; toes more or less webbed, the tips simple or dilated into small disks. Outer metatarsals united. Omosternum generally missing; if present, cartilaginous; sternum a cartilaginous plate, sometimes more or less ossified along the median line. Diapophyses of sacral vertebra more or less dilated. Terminal phalanges obtuse or triangular.

Cosmopolitan, except Australia.

Synopsis of the Species.

I. Old-World Species.

A. Crown without bony ridges.

1. First finger shorter than second.

a. Toes half webbed.

Two small parotoids on each side..... 1. *borbonicus*, p. 286.
No metatarsal tubercles ..... 2. *brevipes*, p. 287.
Parotoids none ..... 4. *penangensis*, p. 287.

b. Toes more than half webbed.

Parotoids none ..... 5. *pulcher*, p. 288.
Parotoids narrow, elongate ..... 6. *kelaartii*, p. 288.

2. First finger as long as or longer than second.

a. Parotoids none or indistinct.

Habit slender; tarso-metatarsal articulation reaching far beyond the tip of the snout ..... 3. *leptopus*, p. 287.
Tympanum as large as the eye..... 31. *carens*, p. 301.
Canthus rostralis indistinct; tympanum much smaller than the eye ..... 32. *blanfordii*, p. 301.

b. Parotoids distinct.

α. Tympanum as large as the eye, or nearly as large.

No tarsal fold; skin smooth..... 7. *hololius*, p. 289.
A tarsal fold ..... 27. *regularis*, p. 298.

β. Tympanum smaller than the eye.

* Toes not half webbed.

Tympanum rather indistinct; a tarsal

fold; subarticular tubercles of toes double † ..... 19. *calamita*, p. 293.
Tympanum very distinct, half the width of the eye; a tarsal fold; subarticular tubercles of toes simple..... 20. *raddii*, p. 294.
Tympanum distinct, one fourth the width of the eye: a tarsal fold ..... 22. *sumatranus*, p. 295.
Tympanum distinct, one third the width of the eye; belly almost entirely smooth 29. *angusticeps*, p. 300.
Tympanum distinct: no tarsal fold; skin remarkably rough ..... 37. *tuberosus*, p. 304.
Tympanum hidden: no tarsal fold ... 38. *taitanus*, p. 305.

** Toes at least half webbed.

No tarsal fold; subarticular tubercles of toes simple; snout projecting ..... 8. *beddomii*, p. 289.
A tarsal fold; subarticular tubercles of toes double ..... 21. *latastii*, p. 295.
A tarsal fold; subarticular tubercles of toes simple ..... 25. *viridis*, p. 297.
A tarsal fold; subarticular tubercles of toes double; first finger considerably longer than second..... 26. *mauritanicus*, p. 298.
No tarsal fold; subarticular tubercles of toes simple..... 28. *benguelensis*, p. 299.
No tarsal fold; subarticular tubercles of toes simple; a fold across the occipital region..... 30. *olivaceus*, p. 300.
No tarsal fold; subarticular tubercles of toes double..... 36. *vulgaris*, p. 303.

γ. Tympanum hidden ..... 39. *sikkimensis*, p. 305.

B. Crown with bony ridges.

1. No parietal ridges.

a. Orbito-tympanic ridges not much developed.

Cranial ridges rather indistinct; tympanum very small ..... 40. *himalayanus*, p. 305.
Cranial ridges very distinct; tympanum at least two thirds the width of the eye ..... 41. *melanostictus*, p. 306.
Cranial ridges very distinct; tympanum very small ..... 42. *microtympanum*, [p. 307.

† Most of them; these tubercles are never all double. By "tubercles double" I mean that at least those under the last phalanges of the fourth toe are thus disposed.

b. Orbito-tympanic ridges much developed, swollen.

Toes entirely webbed ..... 51. *asper*, p. 313.
Toes not quite half webbed ..... 52. *celebensis*, p. 313.
Orbito-tympanic ridge confluent with the parotoid ..... 53. *galeatus*, p. 314.

2. A parietal ridge.

a. Supero-orbital and parietal ridges forming together a straight or nearly straight line.

Tympanum as large as the eye ..... 47. *biporcatus*, p. 311.
Tympanum hardly two thirds the width of the eye; parietal ridges much swollen ..... 48. *claviger*, p. 311.

b. Supero-orbital and parietal ridges forming together an angle.

Tympanum two thirds the width of the eye; tarso-metatarsal articulation reaching beyond the tip of the snout . 49. *divergens*, p. 312.
Tympanum two thirds the width of the eye; tarso-metatarsal articulation not reaching beyond the tip of the snout . 50. *parietalis*, p. 312.
Tympanum very small; first finger shorter than second; second and third equal ..... 61. *dialophus*, p. 319.

II. American Species.

A. Cranial ridges none, or indistinct.

1. Toes very slightly webbed.

No tarsal fold; tympanum small ..... 9. *debilis*, p. 289.
A thin tarsal fold; skin smooth; tarso-metatarsal articulation reaching beyond the tip of the snout ..... 10. *hæmatiticus*, p. 290.
A rather indistinct tarsal fold; tympanum two thirds the width of the eye; tarso-metatarsal articulation marking the eye ..... 11. *guttatus*, p. 290.
A tarsal fold; tympanum hidden ..... 13. *cæruleostictus*, p. 291.

2. Toes one-third or half webbed.

Skin perfectly smooth ..... 12. *glaberrimus*, p. 291.
Tympanum scarcely perceptible; a lateral dermal fold ..... 14. *diptychus*, p. 292.
Tympanum concealed; lores vertical .. 16. *monksiæ*, p. 292.
Tympanum large, very distinct..... 17. *mexicanus*, p. 293.

Tympanum absent; no tarsal fold; first finger not longer than second ..... 18. *variegatus*, p. 293.
Tympanum distinct, half the width of the eye ..... 23. *halophilus*, p. 295.
Inner metatarsal tubercle very large, shovel-shaped..... 33. *compactilis*, p. 302.
Tympanum hidden; no tarsal fold; first finger longer than second ..... 34. *simus*, p. 302.
Tympanum distinct, very small; parotoids short ..... 35. *spinulosus*, p. 302.

3. Toes entirely webbed, or nearly so.

Skin perfectly smooth ..... 15. *politus*, p. 292.
Skin warty..... 24. *boreas*, p. 296.

B. Head with bony ridges.

1. A tympanum.

a. Upper eyelid normal.

α. Supraorbital and postorbital ridges straight, forming together a right angle.

* Derm of head free from cranial ossification.

Parotoids close to the eye; metatarsal tubercles blunt ..... 43. *intermedius*, p. 307.
Parotoids close to the eye; metatarsal tubercles shovel-shaped..... 44. *dipternus*, p. 308.
Tympanum large, very distinct..... 45. *lentiginosus*, p. 308.
Tympanum small; toes nearly entirely webbed ..... 46. *occipitalis*, p. 310.
Tympanum hidden..... 54. *bocourtii*, p. 314.
Tympanum distinct, half the size of the eye; toes extensively webbed ..... 64. *coniferus*, p. 321.

** Derm of head involved in cranial ossification.

Tympanum at least half the width of the eye ..... 74. *peltocephalus*, p. 325.
Temporal region entirely bony, the tympanum being a mere foramen perforating a shield of bone ..... 75. *empusus*, p. 326.

β. Supraorbital and postorbital ridges forming together a more or less regular curve, with the parietal ridges (if present) a ⅄-shaped figure.

* Edge of the upper jaw strongly dilated horizontally ..... 68. *d'orbignyi*, p. 322.

** Angles of jaws projecting. 59. *typhonius*, p. 317.

*** Jaws normal.

† Snout not prominent.

‡ Tympanum more than half the width of the eye, perfectly distinct.

Parotoids narrow, elongate, pointed behind; tarso-metatarsal articulation not reaching the eye ..... 55. *arenarum*, p. 314.
Parotoids enormous ..... 57. *marinus*, p. 315.
Parotoids moderate, elongate; tarso-metatarsal articulation reaching in front of the eye, or beyond..... 58. *crucifer*, p. 316.
Parotoids short, round or subtriangular . 62. *valliceps*, p. 319.
Toes nearly free..... 63. *melanochlorus*, p. 320.
First finger not extending beyond second 69. *sternosignatus*, p. 323.

‡‡ Tympanum less than half the width of the eye, or indistinct.

Tympanum perfectly distinct; a tarsal fold; a lateral dermal fold ..... 56. *molitor*, p. 315.
Tympanum distinct in its anterior half; fingers remarkably elongate ..... 65. *auritus*, p. 321.
Tympanum hidden; fingers very slender. 66. *veraguensis*, p. 321.
Tympanum distinct, one fifth orbit; toes shortly webbed ..... 67. *coccifer*, p. 322.

†† Snout prominent, contracted.

No tarsal fold; interorbital space narrow. 70. *canaliferus*, p. 323.
No tarsal fold; interorbital space slightly broader than the upper eyelid ..... 72. *granulosus*, p. 324.
A tarsal fold; no preorbital ridge..... 71. *argillaceus*, p. 324.
A tarsal fold ..... 73. *gutturosus*, p. 324.

b. Upper eyelid produced in a horn-like dermal appendage. 60. *ceratophrys*, p. 319.

2. No tympanum.

Derm of head involved in cranial ossification ..... 76. *fastidiosus*, p. 326.
Digits inclosed in the skin, leaving the longest projecting ..... 77. *epioticus*, p. 326.

1. Bufo borbonicus.

Bufo cruentatus, *Günth. Cat.* p. 62.
Hylaplesia borbonica, *Boie, Isis*, 1827, p. 294; *Tschudi, Batr.* p. 70; *Peters, Mon. Berl. Ac.* 1863, p. 81, & 1867, p. 34.
Bufo cruentatus, *Tschudi, Batr.* p. 88; *Dum. & Bibr.* p. 62.
—— borbonicus, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 193.

Habit slender. Crown without bony ridges; snout obliquely truncate, with angular canthus rostralis; loreal region vertical; interorbital space broader than the upper eyelid; tympanum small,

Bufo jerboa, Blgr.

a. ♂ S. E. Borneo. Fischer. (Type)

b. f. ♀ ovy. Sarawak. Everett.

c-d. ♀ ovy. Kina Balou. Everett

Bufo spinulifer, Mocq.

a. ♀ Kina Balou. Everett.

rather indistinct. Limbs slender; the hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. First finger a little shorter than second; toes half-webbed, with simple subarticular tubercles; tips of fingers and toes swollen into small disks; two small metatarsal tubercles; no tarsal fold. Skin covered with small tubercles; two small parotoids on each side, one on the neck, the other one near the shoulder. Blackish brown above, with white spots; beneath marbled with brown.

Java.

a. Bad state. Java.

2. Bufo brevipes.

Hylaplesia brevipes, *Peters, Mon. Berl. Ac.* 1867, p. 34.

First finger very short. Tips of fingers and toes dilated into well-developed disks. No metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the centre of the eye. Otherwise as in *B. borbonicus*.

Zamboanga.

3. Bufo leptopus. (PLATE XVIII. fig. 4.)

Bufo leptopus, part.*, *Günth. Proc. Zool. Soc.* 1872, p. 598.

Habit slender. Crown without bony ridges; head small; snout obliquely truncate, with angular canthus rostralis; loreal region vertical; interorbital space slightly broader than the upper eyelid; tympanum distinct, not quite half the width of the eye. Fore limb slender, as long as the distance between the eye and the vent; fingers slender, first and second equal, the tips swollen into very small disks. Hind limb slender, the tarso-metatarsal articulation reaching far beyond the tip of the snout; toes slightly webbed at the base, the tips dilated into very small disks; subarticular tubercles none; two rather indistinct metatarsal tubercles; no tarsal fold. Skin covered with small warts and tubercles; parotoids none. Brown above, marbled with reddish; throat and chest blackish.

Borneo.

a. ♀. Matang. (Type.)
b. ♀. Matang.

4. Bufo penangensis.

Ansonia penangensis, *Stoliczka, Journ. As. Soc.* 1870, p. 152, pl. 9. f. 4.

Habit slender. Crown without bony ridges; snout short and blunt; tympanum distinct, smaller than the eye; fingers long, first

* The adult only.

shorter than second; toes short, half webbed; tips of fingers and toes slightly swollen. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. The whole of the upper and lower skin, except on chin and throat, tuberculated; parotoids none. Above uniform ashy, marbled and reticulated with black; sides of head and body, and the limbs, with rather large pale orange or yellowish spots, lower parts dusky with small white spots, especially on the sides of the belly and in front of the shoulders; lower part of belly and the inner thighs of a beautiful rose-colour in living specimens.

Pinang.

5. Bufo pulcher.

Ansonia ornata, *Günth. Proc. Zool. Soc.* 1875, p. 568, pl. 63. f. A.

Habit slender. Crown without bony ridges; snout short, obliquely truncate, with angular canthus rostralis and vertical loreal region; interorbital space a little broader than the upper eyelid; tympanum distinct, about half the size of the eye. Fingers rather slender, first much shorter than second; toes short, nearly entirely webbed; subarticular tubercles simple, not very prominent; tips of fingers and toes slightly swollen; metatarsal tubercles two, not very prominent; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Anterior half of the back finely tubercular, the remainder smooth; no parotoids. Black; upperside of the head and a dorsal line generally grey; beneath with large bright yellow spots. Male with a subgular vocal sac.

Brumagherries.

a, *b*. Many spec., ♂ & hgr.	Brumagherries.	Col. Beddome [C.].	(Types.)

6. Bufo kelaartii.

Bufo kelaartii, *Günth. Cat.* p. 140, pl. x. f. A.
Adenomus badioflavus, *Cope, Proc. Ac. Philad.* 1860, p. 371.
Bufo kelaartii, *Günth. Rept. Brit. Ind.* p. 421.
—— kandianus, *Günth. Ann. & Mag. N. H.* 1872, ix. p. 87.

Crown without bony ridges; snout rounded or slightly pointed in front; canthus rostralis angular; interorbital space as broad as the upper eyelid; tympanum small, rather indistinct. Fingers rather slender, first not extending as far as second; toes entirely webbed, with simple subarticular tubercles; tips of fingers and toes swollen; two small metatarsal tubercles; tarsal fold present or absent. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Skin covered with small tubercles; parotoid very narrow and rather elongate. Brownish above; a light cross band between the eyes; beneath brown-spotted.

Ceylon.

a. ♂ *Bufo muelleri* Blgr.
Mindanao Basle Mus. (Type)

R. g. Newera Ellia, 7000 ft. Green.

a–b, c, d. ♀ & hgr.	Ceylon.	Sir A. Smith [P.].	Types.
e. Hgr.	Ceylon.		
f. ♀.	Ceylon.	B. H. Barnes, Esq.	
g. Hgr.	Ceylon.	Col. Beddome [C.].	
h. ♂.	Ceylon.	G. H. K. Thwaites, Esq. [P.]. (Type of *Bufo kandianus.*)	
i. Yg.	Ceylon.	G. H. K. Thwaites, Esq. [P.].	

7. Bufo hololius.

Bufo hololius, *Günth. Proc. Zool. Soc.* 1875, p. 569, pl. 64. f. A.

Crown without bony ridges; snout short, prominent; interorbital space as broad as the upper eyelid; tympanum very distinct, nearly as large as the eye, close to it. Fingers short, first extending a little beyond second; toes short, webbed at the base only; subarticular tubercles simple, not very prominent; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Skin smooth, the back with very flat, smooth, distinctly porous glandular patches; parotoid flat. Olive above, marbled with brown; beneath immaculate.

Malabar.

a. ♀.	Malabar.	Col. Beddome [C.].	(Type.)

8. Bufo beddomii. (Plate XIX. fig. 1.)

Bufo beddomii, *Günth. Proc. Zool. Soc.* 1875, p. 569.
—— travancoricus, *Beddome, Proc. Zool. Soc.* 1877, p. 685.

Crown without bony ridges; snout short, projecting, with angular canthus rostralis; interorbital space a little broader than the upper eyelid; tympanum very small, sometimes indistinct. First finger not extending beyond second; toes nearly entirely webbed, with simple subarticular tubercles; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Upper parts covered with rough tubercles; parotoids ovate, about twice as long as broad, rather indistinct. Dark brown above, with indistinct black spots; limbs beautifully marbled with carmine; lower surfaces marbled with brown.

Malabar; Travancore.

a. ♀.	Malabar.	Col. Beddome [C.].	(Type.)
b. ♀.	Malabar.	Col. Beddome [C.].	
c. ♀.	Chokam Patty hills, 4000 ft.	Col. Beddome [C.].	(As typical of *Bufo travancoricus.*)

9. Bufo debilis.

Bufo debilis, *Girard, Proc. Ac. Philad.* 1854, p. 87.
—— insidior, *Girard. l. c.* p. 88, *and U.S. Mex. Bound. Surv.* ii. p. 26, pl. 41. f. 13–18.

Crown without bony ridges; snout more or less protruding;

tympanum small. Toes slightly webbed at the base; no tarsal fold. Parotoids elongate. Brownish yellow or bluish slate above, dark-spotted; beneath immaculate.

United States (Chihuahua, Sonora, Lower Rio Grande).

10. Bufo hæmatiticus.

Bufo hæmatiticus, *Cope, Proc. Ac. Philad.* 1862, p. 157; *Keferst. Gött. Nachr.* 1867, p. 353, *and Arch. f. Naturg.* 1868, p. 295, pl. 9. f. 7.

Rhæbo hæmatiticus, *Cope, l. c.* p. 357.

Crown without bony ridges; snout short, obliquely truncated, with angular canthus rostralis; loreal region vertical; interorbital space broader than the upper eyelid; tympanum very distinct, about half the width of the eye. Fingers slender, with slightly swollen tips, first extending beyond second; toes short, webbed at the base, with slightly swollen tips; subarticular tubercles simple, not very prominent; two slightly developed metatarsal tubercles; a thin tarsal fold. Limbs slender. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches beyond the tip of the snout. Skin perfectly smooth everywhere, or with very small tubercles on the upper surfaces; parotoids large, elliptic, angular externally. Brown above; a light line from the tip of the snout along the canthus rostralis, the edge of the eyelid, the parotoid, and the side of the body to the groin; sides of head and body below this line reddish brown; a light spot below and in front of the eye; a few large, symmetrical, light-edged spots on the back; a few transverse, black, light-edged spots on the limbs; brown beneath, marbled with darker.

Colombia; Costa Rica.

a. ♀.	Costa Rica.	
b–c. Hgr.	Costa Rica.	O. Salvin, Esq. [C.].

11. Bufo guttatus.

Bufo leschenaultii, *Günth. Cat.* p. 64.

Bufo guttatus, *Schneid. Hist. Amph.* i. p. 218; *Wiegm. Isis*, 1833, p. 657; *Peters, Mon. Berl. Ac.* 1863, p. 81.

—— leschenaultii, *Tschudi, Batr.* p. 89; *Dum. & Bibr.* p. 666, pl. 91. f. 1.

Rhæbo leschenaultii, *Cope, Proc. Acad. Philad.* 1862, p. 357; *Espada, Viaj. Pacif., Vert.* p. 167.

Crown without bony ridges; snout short, truncated; canthus rostralis angular; loreal region vertical; interorbital space much broader than the upper eyelid; tympanum very distinct, vertically elliptic, about two thirds the width of the eye. Tips of fingers and toes swollen; first finger extending far beyond second; toes slightly webbed at the base, with simple subarticular tubercles; two moderate metatarsal tubercles; a rather indistinct tarsal fold. The

a. Several specs. Dural Co. Texas. Taylor.
b. ♀. Catorce, S. Luis Potosi. "

d. ♂. ♀ & lgs. Bebedero, Costa Rica. Underwood.

♂ Nanegal, Ecuador. T. hyrnpes.

hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces with flat, scarcely prominent warts; parotoids large, depressed, descending to the armpit; lower surfaces nearly smooth. Brown above; greyish brown beneath, with round light spots; lower lip bordered with light spots.

Guiana.

a. ♀ [from snout to vent 177 millim.].		Demerara Falls.
b. Hgr.		Demerara Falls.

12. Bufo glaberrimus.

Bufo glaberrimus, *Günth. Proc. Zool. Soc.* 1868, p. 483, pl. 37. f. 2.

Crown without bony ridges; snout short, truncated, with angular canthus rostralis; loreal region vertical; interorbital space as broad as the upper eyelid; tympanum very distinct, about half the width of the eye. First finger extending beyond second; toes nearly half webbed, with simple subarticular tubercles; two slightly developed metatarsal tubercles; an indistinct tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the nostril. Skin perfectly smooth, with a few slight tubercles on the sides of the body; parotoids large, ovate, very prominent. Upper parts brownish black; the sides black; in one specimen a beautiful rose-coloured spot in the groin, and smaller spots of the same colour on the hinder part of the thigh; lower parts blackish, with white dots. Male with a subgular vocal sac.

Colombia; Ecuador.

a. ♂.	Bogota.	(Type.)
b. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
c. Hgr.	Sarayacu, Ecuador.	Mr. Buckley [C.].

13. Bufo cæruleostictus. (PLATE XXI. fig. 1.)

Bufo cæruleostictus, *Günth. Proc. Zool. Soc.* 1859, p. 415.

Crown with but a slight indication of bony ridges; snout short, rounded, with angular canthus rostralis; interorbital space concave, broader than the upper eyelid; tympanum hidden. First finger extending slightly beyond second; toes webbed at the base, with simple subarticular tubercles; two feebly developed metatarsal tubercles; a tarsal fold. Limbs rather slender. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Skin nearly smooth, or with small flat tubercles; parotoids elliptic, elongate. Uniform dark brown above, greyish brown beneath. (Male with a subgular vocal sac.)

Ecuador.

a, *b*. ♀.	W. Ecuador.	Mr. Fraser [C.]. (Types.)

14. Bufo diptychus.

Bufo poeppigii, *Girard, U.S. Expl. Exped., Herp.* p. 90.
—— diptychus, *Cope, Proc. Ac. Philad.* 1862, p. 353, & 1863, p. 50.

Crown without bony ridges; snout elevated, not protruding; tympanum small, scarcely perceptible. Inner finger slightly longer than second; toes one-third webbed; a tarsal cutaneous fold continuous with the inner metatarsal tubercle; outer tubercle subconical. Extended hind limb reaching the tip of the snout. Skin above smooth, with a few scattered tubercles; parotoids divergent, trilateral, extending posterior to axilla, and continuous with a lateral dermal fold; sides and lower surfaces rugulose. Above light brown, with deep-brown spots; a deep-brown chevron-shaped band between the orbits; a light vertebral line; belly brownish white, with a median series of blackish variegations from sternum to abdomen.

Paraguay.

15. Bufo politus.

Bufo politus, *Cope, Proc. Ac. Philad.* 1862, p. 158.

Crown without bony ridges; profile of snout gradually descending nearly to the lip; canthus rostralis none; tympanum one fourth the size of the eye, narrowed above. Extremities stout; toes fully webbed; soles smooth, without tubercles, except that formed by the first cuneiform bone, which is very prominent, oblique, conic; a tarsal ridge, no fold. Skin of the whole body smooth, shining, without rugosities or spines; parotoids oval, moderate; a series of flat glands on each side of the back, symmetrically arranged; glands also on the superior surfaces of humerus, antebrachium, femur, and tibia; three of the last remarkably large. Above olive-brown, the glands bordered with deep brown; inner faces of the extremities straw-coloured, with large brown spots; beneath bright yellow, with variously inosculating black bands; palms and soles slate-colour.

Nicaragua.

16. Bufo monksiæ.

Bufo monksiæ, *Cope, Proc. Amer. Philos. Soc.* xviii. p. 263.

Crown without bony ridges; canthus rostralis sharp, lores perpendicular, snout vertically descending to lip; tympanum concealed. Fingers moderate, first and second equal; toes hardly half webbed; two prominent, blunt, metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the posterior border of orbit. Skin rough, with small harsh tubercles; parotoid rather large, a wide oval. Colour above blackish brown, with a few small ashen spots, and an ashen cross band extending across the eyelids and intervening frontal space; lores and lips brown-spotted; blackish spots on the sides, belly, throat, and limbs.

Guanajuato, Mexico.

a. ♀ Ciudad. Forrer.
b. ♀♀. Zacatecas Cameron.

a-d. *Bufo nigricans* Wiegm.
Idrapoea, Chili. James.

17. Bufo mexicanus.

Bufo mexicanus, *Brocchi, Bull. Soc. Philom.* (7) iii. p. 23.

Crown without distinct bony ridges. Tympanum large, very distinct. First finger a little longer than second; toes half webbed; two metatarsal tubercles. Back covered with small round tubercles; parotoids subquadrangular. Brown above, with a few white spots, most distinct on the upper lip; beneath immaculate.

Mexico.

18. Bufo variegatus.

Nannophryne variegata, *Günth. Proc. Zool. Soc.* 1873, p. 402, pl. 30. f. 1 & 2.

Crown without bony ridges; snout short, blunt; interorbital space as broad as the upper eyelid; tympanum absent. First finger not extending beyond second; toes short, flattened, one-third webbed, with double subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder or the eye. An ovate, well-defined parotoid gland behind the eye; other similar glands on the upper surfaces. Dark brown above, ornamented with five more or less defined light lines along the back, the middle one being generally the most distinct; beneath marbled with black. Male without vocal sac.

Chili; W. Patagonia.

a–b. ♂ & hgr.	Chili.	C. Darwin, Esq. [P.].	
c–d. ♂ & hgr.	Puerto Bueno.	Dr. Cunningham [P.].	Types.
e. ♂.	Port Grappler.	Dr. Cunningham [P.].	
f. Hgr.	Eden Harbour.	Lords of the Admiralty. [P.].	
g–h, i, k. Many spec., ♀ & yg.	Puerto Bueno.	Dr. Coppinger [C.].	
l. ♂.	Port Sharrua.	Dr. Coppinger [C.].	
m. ♂.	Alert Bay.	Dr. Coppinger [C.].	
n. ♂.	Port Riofico.	Dr. Coppinger [C.].	
o. ♀.	Trinidad Channel.	Dr. Coppinger [C.].	
p. ♀.	Crucifixion Channel.	Dr. Coppinger [C.].	
q. ♂.	Latitude Cove.	Dr. Coppinger [C.].	

19. Bufo calamita.

Bufo calamita, *Günth. Cat.* p. 57.

Rösel, Hist. Ran. p. 107. pl. 24.

Bufo calamita, *Laur. Syn. Rept.* p. 27, pl. 1. f. 1; *Daud. Rain.* p. 77, pl. 28. f. 1, *and Rept.* viii. p. 153; *Bonap. Faun. Ital.*; *Bell, Brit. Rept.* p. 116; *Steindachn. Novara, Amph.* p. 40; *Fatio, Vert. Suisse*, iii. p. 462; *Koch, Ber. Senck. Ges.* 1872, p. 106; *Schreib. Herp. Eur.* p. 141; *De Betta, Faun. Ital., Rett. Anf.* p. 75; *Lataste, Herp. Gir.* p. 291; *Leydig, An. Batr.* p. 36; *Boulenq. Proc. Zool. Soc.* 1880, p. 547.

Bufo cruciatus, *Schmid. Hist. Amph.* fasc. i. p. 193.
—— cursor, *Daud. Rept.* viii. p. 104.
—— viridis, part., *Dum. & Bibr.* p. 681.
Epidalea calamita, *Cope, Nat. Hist. Rev.* 1865, p. 102

Crown without bony ridges; snout short, blunt; interorbital space narrower than the upper eyelid; tympanum small, more or less indistinct. First finger not extending beyond second; toes webbed at the base, with double subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. Hind limb short; it being carried forwards along the body, the tarso-metatarsal articulation reaches generally the hinder edge of the eye in males, the shoulder in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids small, oval or subtriangular, depressed; a parotoid-like gland on the calf. Olive-marbled or spotted above; generally a yellow vertebral line; beneath more or less black-spotted. Male with a subgular vocal sac.

Europe.

a–b. ♂ ♀.	Cambridgeshire.	
c–d. ♂.	Blackheath.	
e. Hgr.	Kerry, Ireland.	Dr. Purcell [P.].
f–g. Yg.	Hamburg.	Dr. Fricker [P.].
h. ♀.	Calais.	Dr. W. Leach [P.].
i. ♂.	Madrid.	Lord Lilford [P.].
k. ♂.	Porto.	E. Allen, Esq. [P.].

20. Bufo raddii.

Bufo raddei, *Strauch, Voy. Przewalski. Rept. & Batr.* p. 73; *Latastr, Rev. Int. Sc.* 1878, p. 497; *Boulenger, Proc. Zool. Soc.* 1880, p. 551.

Crown without bony ridges; snout short, blunt; interorbital space narrower than the upper eyelid; tympanum very distinct, half the width of the eye. First finger not extending beyond second; toes shortly webbed, with simple subarticular tubercles; two metatarsal tubercles, the outer much smaller than the inner; a tarsal fold. Hind limb short; it being carried forwards along the body, the tarso-metatarsal articulation marks generally the eye in males, the tympanum in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids rather large, very variable in shape; a parotoid-like gland on the calf. Light olive above, marbled or spotted with brown or blackish; a light vertebral stripe; beneath generally unspotted. Male with a subgular vocal sac.

Eastern temperate Asia.

a–b. ♂ & yg.	Sungatschi.	St. Petersburg Museum.
c–i. ♂, ♀, & hgr.	Chefoo.	R. Swinhoe [P.].

21. Bufo latastii. (Plate XIX. fig. 2.)

Crown without bony ridges; snout short, blunt; interorbital space narrower than the upper eyelid; tympanum very distinct.

l. Several spees. ♂♀ yg. Heyst s. M. Belgium. Blgr.
m. ♂ Caruña, Spain. Sevane.
n-p. ♂♀ Mondorf, Luxemburg. Boulenger.
q-r. Agr. yg. Jylland, Denmark. Copenhagen Mus.
s. ♀ Minas de S. Domingos, Alemtijo Gadow.
t-u. ♂ Brunswick. Heller.
v. Several spees. ♂♀ hg. Nr. St. Mals. Boulenger
w. Many larvæ. " "
x-b'. Larvæ. Mertola, Portugal. Bedriaga.
c'-d'. ♂♀ in copula. Paris Hérou-Royer.
e'. ♀ Otten d. Boulenger.
f'-g'. ♂ Castlemaine Nr. Ireland. Robinson
h'-m'. ♂♀ yg. Seville. Calderon.

k. ♀ Chefoo. Reid.

f. Ys (?) Hoangho R., China. Littledale

half the width of the eye. First finger not extending beyond second; toes two-thirds webbed, with double subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the hinder edge of the eye. Upper parts with irregular, depressed, distinctly porous warts; parotoids moderate, kidney-shaped; a parotoid-like gland on the calf. Olive above, spotted or marbled with blackish; a light vertebral stripe; beneath more or less spotted or marbled with blackish.

Ladak.

This new species, which I have the pleasure of naming after my friend M. Fernand Lataste, is closely allied to both *B. calamita* and *B. raddii*. From the former it differs chiefly in the great distinctness of the tympanum and the extensive web between the toes; from *B. raddii* in the latter character and in the double subarticular tubercles of the toes.

a–e. ♀, hgr., & yg. Ladak. T. C. Jerdon, Esq. [P.].

22. Bufo sumatranus.

Bufo sumatranus, *Peters, Mon. Berl. Ac.* 1871, p. 648.

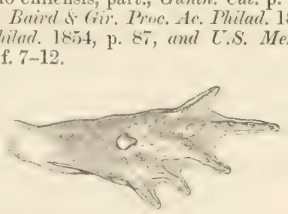
Crown without bony ridges; snout short, subacuminate; tympanum distinct, one fourth the width of the eye. First finger not extending beyond second; toes webbed at the base; two moderate metatarsal tubercles; a tarsal fold. Hind limb short. Upper surfaces closely granulate, with large conical warts; parotoids oval, twice as long as broad. Greyish brown above, with brown dark-edged spots; beneath black-spotted.

Sumatra.

23. Bufo halophilus.

Bufo chilensis, part., *Günth. Cat.* p. 57.

Bufo halophila, *Baird & Gir. Proc. Ac. Philad.* 1853, p. 301; *Girard, Proc. Ac. Philad.* 1854, p. 87, *and U.S. Mex. Bound. Surv.* ii. p. 26, pl. 41. f. 7–12.



Lower surface of foot.

Crown without bony ridges; snout short, blunt; interorbital space flat, as broad as the upper eyelid; tympanum very distinct, half the width of the eye. First finger extending beyond second; toes half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried

forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces with irregular, distinctly porous warts; paratoids short, subtriangular, depressed. Olive above, marbled with darker; a light vertebral line; belly spotted with blackish.

California.

a. ♀.	California.	
b–c. Yg.	Fraser River.	H.M.S. 'Plumper.'

24. Bufo boreas.

Bufo boreas, *Baird & Gir. Proc. Ac. Philad.* 1852, p. 174; *Girard, U.S. Expl. Exped., Herp.* p. 74, pl. 6. f. 4–9.
Bufo columbiensis, *Baird & Gir. Proc. Ac. Philad.* 1853, p. 378; *Girard, l. c.* p. 77, pl. 5. f. 4–9.

Lower surface of foot.

Crown without bony ridges; snout short, blunt; interorbital space flat, or slightly concave, as broad as the upper eyelid; tympanum very distinct, half the width of the eye. First finger not extending beyond second; toes entirely webbed or nearly so, with double subarticular tubercles (generally only under the last phalanges of the longest toe); two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the nostril in males, the tympanum or eye in females. Upper surfaces with irregular, distinctly porous warts; parotoids short, subtriangular or suboval, depressed. Olive above, marbled with darker; generally a light vertebral line; belly more or less spotted with blackish. Male with a subgular vocal sac.

California; Montana.

a. ♂.	Fort Hallet.	B. R. Ross, Esq. [P.].
b–d, e. Many spec., ♀ & yg.	Sumass Prairies.	Boundary Commission [C.].
f. ♀.	Vancouver's Island.	Lieut.-Col. Hawkins [C.].
g. Several spec., yg.	S. Juan, Orcas Islands.	Voy. of H.M.S. 'Plumper.' Dr. Lyall [C.].
h–i. ♀.	California.	Mr. Gruber [C.].

d. ♂ Graham I.ds. Queen Charlotte Group. Keen.
e-f. ♀ hyr. San Francisco. Christiania Mus.
g ♀ Redlands, Cal. Brock.

k-l. ♀ Santa Cruz, California. Forrer.
m-n. ♂♀ Griffin Lake, Brit. Col. Eisenmann.
o. ♂ Mission Junction, " " "
p. Ys Field, " " "
q. ♂ Calgary, Alberta "
r-t. Ys. Moose Jaw. Assiniboia "
u. Ys Crais, Montana. "

Bufo surdus Blgr.

a. ♂	Baluchistan.	Gerrard (Izpe).
b. Hyr.	Marsh, Bolan Pass.	Blanford.
c. ♂	Baluchistan.	"

B.

hh-ll ♂♀	Ibiza, Baleares.	Boscá.
mm. ♂	Frankfort M.	Boulenger.
nn-oo. Yg., albinos.	Turin.	Bonelli.
p.p. Hyr.	I° of Sprogö, Denmark.	Copenhagen Mus.
qq. Hyr.	Cyprus	Lilford.
rr-vv. ♂♀.	River Ili.	Lansdell.
ww-xx. ♀	Kashgar.	"
yy-bb. Yg.	Casablanca, Morocco.	Senckenberg M.
c'. ♀	Tedschen, nr Merv.	Warsaw Mus.
d'. Hyr.	Moscow.	Mozow Univ.
e'. ♂	Kirghiz Steppes.	"
f'-g' ♂♀	Duirat Tunisia	Anderson.
h'. Yg.	Between Oran & Tlemsow.	"
i' Many larvæ.	Breslau	Bonn.
k'-o'. Larvæ.	Feldmoching, nr Munich.	Wolterstorff
p'-u'. " Yg.	Isexia	Copenhagen Mus.
v'. Larva.	Bonn.	Bedriaga.
w'-x'. Larvæ.	Italy.	Hérow Royer.
y'-z'. "	Pizzo, Calábria.	Giglioli.
a²-e². " Yg.	Turin	Camerano.
f². ♂	Birket-Ateich, Syria.	Barrois.

25. Bufo viridis.

Bufo viridis, *Günth. Cat.* p. 58.

Bufo viridis, *Laur. Syn. Rept.* pp. 27 & 111, pl. 1; *Daud. Rain.* p. 79, pl. 28. f. 2, *and Rept.* viii. p. 156; *Bonap. Faun. Ital.*; *Guichen. in Lefebvre, Voy. Abyss.* iv. *Zool.* p. 221; *Strauch, Mém. Ac. St. Pétersb.* (7) iv. no. 7, p. 79; *Steindachn. Novara, Amph.* p. 39; *Stoliczka, Journ. As. Soc.* 1870, p. 155; *Fatio, Vert. Suisse,* iii. p. 411; *Koch, Ber. Senck. Ges.* 1872, p. 170; *De Betta, Faun. Ital., Rett. Anf.* p. 74; *Lessona, Atti Ac. Linc. Mem. Cl. Sc. fis. &c.* i. p. 1085, pl. 4; *Bouleng. Proc. Zool. Soc.* 1880, p. 553, pl. 50.

—— schreberianus, *Laur. l. c.* p. 27.

Rana variabilis, *Pallas, Spicil. Zool.* vii. p. 1, pl. 6. f. 1 & 2.

Bufo variabilis, *Merr. Syst. Amph.* p. 180; *Eichw. Zool. Spec. Ross. Pol.* p. 167; *Schreib. Herp. Eur.* p. 138; *Leydig, An. Batr.* p. 29.

—— arabicus, *Rüpp. Reise nördl. Afr., Rept.* p. 20, pl. 5. f. 2.

—— viridis, part., *Dum. & Bibr.* p. 681.

—— calamita, *Günth. Rept. Brit. Ind.* p. 426.

—— boulengeri, *Lataste, Rev. Int. Sc.* 1879, p. 438.

Crown without bony ridges; snout short, rather blunt; interorbital space narrower than the upper eyelid; tympanum distinct, about half the width of the eye. First finger extending a little beyond second; toes half or two-thirds webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks generally the anterior corner of the eye in males, the posterior corner in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids very variable in shape and in size, generally moderately elongate and kidney-shaped, sometimes enormous. Olive or greenish, spotted or marbled above, seldom nearly immaculate; beneath whitish, uniform or blackish-spotted. Male with a subgular vocal sac.

Europe; Asia; N. Africa.

a–c. ♂ ♀.	Germany.	
d. ♀.	Turin.	Prof. Bonelli [P.].
e. ♂.	Balcares.	M. G. A. Boulenger [P.].
f. Yg.	Crimea.	B. L. Hawkins, Esq. [P.].
g. Hgr.	Mediterranean.	Mr. Miller [P.].
h. ♀.	Xanthus.	Ch. Fellows, Esq. [P.].
i–l. ♂ ♀.	Dead Sea.	Rev. H. B. Tristram [C.].
m. ♀.	Mount Carmel.	Rev. H. B. Tristram [C.].
n. ♀.	Damascus.	Dr. Anderson [P.].
o. ♂.	Jericho.	Dr. Anderson [P.].
p, q. ♂ & yg.	Euphrates.	Capt. Chesney's Exped.
r–t. Yg.	Arabia.	Capt. Burton [P.].
u. ♀.	Cilician Taurus.	C. G. Danford, Esq. [P.].
v. ♀.	Albistan.	C. G. Danford, Esq. [P.].
w. Hgr.	Kurdistan.	
x. Yg.	Near Resht, Ghilan, N. Persia.	W. T. Blanford, Esq. [P.].
y–z. ♂ ♀.	Near Bam, S.E. Persia.	W. T. Blanford, Esq. [P.].
~~*a.* ♂~~	~~Baluchistan, or S.E. Persia.~~	~~W. T. Blanford, Esq. [P.].~~

β. Many spec.: ♂, yg., & larvæ.	Balti, Tibet.	Messrs. v. Schlagintweit [C.].
γ. Yg.	Tibet.	T. C. Jerdon, Esq. [C.].
δ–ϵ. ♂ ♀.	Lepsa Ala Tau, Siberia.	
ζ. ♂.	Egypt.	Vienna Museum. (As *B. hemprichii*.)
η–ι. Hgr.	Egypt.	M. Lefebvre [P.].
κ. ♂.	Egypt.	J. Burton, Esq. [P.].
λ–μ. Yg.	Guezama.	Sir W. C. Trevelyan [P.].
ν. Several spec.: ♂, ♀, & hgr.	Tripoli.	
ξ. ♂.	Sahara.	Rev. H. B. Tristram [C.].

26. Bufo mauritanicus.

Bufo pantherinus, part., *Günth. Cat.* p. 59.
Bubo arabicus, *Gervais, Ann. Sc. Nat.* (2) vi. 1836, p. 312.
—— mauritanicus, *Schleg. Wagn. Reis. Alg.* iii. p. 134; *Bouleng. Proc. Zool. Soc.* 1880, p. 557, pl. 51.
—— pantherinus, part., *Dum. & Bibr.* p. 687.
—— pantherinus, *Guichen. Expl. Sc. Alg., Zool.* v. p. 23; *Strauch, Mém. Ac. St. Pétersb.* (7) iv. no. 7, p. 80.

Crown without bony ridges; snout short, blunt; interorbital space concave, broader than the upper eyelid; tympanum very distinct, vertically oval, its greatest diameter not much more than half that of the eye. First finger much longer than second; toes webbed at the base, with double subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout in males, the anterior corner of the eye in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids rather large, elliptic, depressed; calf without large gland, strongly tubercular. Above with large insuliform, dark-edged brown or olive spots; beneath whitish, unspotted. Male with a subgular vocal sac.

N.W. Africa.

a. ♀.	Tangiers.
b, *c*. Adult (stuffed).	Algiers.
d–*e*. ♂ ♀.	Tunis.
f. ♀.	Africa.

27. Bufo regularis.

Bufo pantherinus, part., *Günth. Cat.* p. 59.
Bufo guineensis, part., *Günth. l. c.* (*nec Schleg.*).
Geoffr. Descr. Egypte, Rept. pl. 4. f. 1 & 2.
Bufo regularis, *Reuss, Mus. Senckenb.* i. p. 60; *Bouleng. Proc. Zool. Soc.* 1880, p. 560.
—— pantherinus, part., *Dum. & Bibr.* p. 687.
—— cinereus, *Hallow. Proc. Ac. Philad.* 1850, p. 169.
—— maculatus, *Hallow. Proc. Ac. Philad.* 1854, p. 101.

o-p.	♂♀	Creta	Linnaei.
s	♀	Sinaitic Peninsula	Hart.
t	♂	Bushire.	Murray.
v	♀	Corte, Corsica	Florence Mus.
y	♀	Berlin	Boulenger.
x-aa.	♂♀♀yg.	Lerma.	Z & Bleta
bb-cc.	♂	Bala Morghal.	Aitchison
dd.	Hgr.	Quetta to Mushki.	"
ee.	Many larvæ	Do Shak.	"
ff.	"	young. Afghan Boundary.	"
gg.	♀	Municipal Garden of Pera.	Dickson.
~~hh-ii~~	~~♂♀~~	~~Frankfort M.~~	~~Boulenger.~~
~~jj-mm.~~	~~♂♀~~	~~Ibiza, Baleares.~~	~~Bosca.~~

Bufo andersonii, Blgr.

a-b.	Hgr.	Aynere.	Blanford	Types.
c.		Muscat.	"	
d-e.	♂♀	Jatta.		
f-k.	♀♀ hgr.	Muscat	Jayakar.	
l-o	♀	"		
p-r.	yg.	Haithalchin, nr. Aden.		Yerbury.

g-h.	Hgr.	Tangiers.	Boucher.
i-k.	yg.	Mogador.	Senckenberg Mus.
l-m	♂♀.	Tlemsen.	Anderson.
n-p.	yg.	Algiers	"
q-r.	hgr. yg.	Hammana R'irha	"
s-t.	♂♀ (caught in copula)	Biskra	"
u.	♂ (unicolor)	"	Werner.

(*Bufo stomaticus* Lütk.

a. ♀ Assam (?) Copenhagen Mus. (One of the type)

b. ♂ Sikkim. Schlagintweit.

ξ-o. Agr. Mount Sinai.

π ♀ Sierra Leone. Hart.

ρ-6. Agr. & yg. Zanzi, N. of Zanzibar. Jackson

τ. ♀ Kilimanjaro. "

υ-ψ. Agr. Wadekai. Emin Pasha.

ψ ♂ Berbera, Somaliland. Lieut. Phillips

w. Several specs. ♂♀ & hyp. Freetown, Sierra Leone. } Dingey.

aa-bb. ♀ & yg. Zanzibar. Fischer.

cc. ♂ Pt Elizabeth Spencer.

dd-hh. ♂ & yg. Pretoria, Transvaal. Distant.

ii ♀ Pt Elizabeth. Spencer

kk-nn. ♀ & yg. Pretoria, Transvaal. Distant.

oo-ss. Larvæ. Pt Elizabeth. Leslie.

tt-vv. " Alexandria Hérou-Royer

ww-xx. ♂ "

yy-zz. ♂♀ Mombasa. Wilson.

a.² yg Blantyre Mission Stat. Grant.

b.² ♀ Dist. of Lagos. Millson

c²-e² ♂♀ Shiré highlands Johnston

f² ♀ Zomba, Brit. C. Africa "

g² ♀ Near Cape Town Spencer.

h² ♀ Bolama, Senegambia. Kitching.

i²-k² ♂♀ Niger. Crow.

l² ♀ Shiré Highlands. Scott Elliot

Rana mosaica, *Seetzen, Reise Syr. Paläst. &c.* iii. p. 492.
Bufo spinosus, *Bocage, Proc. Zool. Soc.* 1868, p. 845.

Crown without bony ridges; snout short, rather blunt; interorbital space flat or slightly concave, as broad as or a little narrower than the upper eyelid; tympanum very distinct, vertically oval, as large as the eye, or nearly so. First finger much longer than second; toes one-third webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the anterior corner of the eye. Upper parts with irregular, depressed, often spine-bearing warts; parotoids elliptic, more or less elongate. Above uniform or variously spotted; sometimes a light vertebral line; beneath immaculate or with large burnt-like spots. Male with a subgular vocal sac.

Africa; Arabia.

a–c, d–f. ♀ & yg.	Egypt.	A. Christy, Esq. [P.].
g. ♂.	Belliauch, Upper Egypt.	Dr. Anderson [P.].
h. ♀.	Luxor, Upper Egypt.	Dr. Anderson [P.].
i–m. ♀ & hgr.	Lake Ashanghi, Abyssinia.	W. T. Blanford, Esq. [P.].
n–o. ♂ ♀.	Antalo.	
p–q. ♀ & yg.	Zambesi Exped.	Sir J. Kirk [C.].
r–s. ♀.	Gambia.	
t. ♀.	Old Calabar.	Dr. J. A. Smith [P.].
u–y. ♂, ♀, & yg.	Caraugigo.	Dr. Welwitsch [C.].
z. ♀.	Duque de Bragance.	Prof. Barboza du Bocage [P.].
α, β. ♂ ♀.	W. Africa	Mr. Rich [C.].
γ. ♂.	Midian.	Capt. Burton [P.].

VAR. A.—Smaller, from snout to vent 55 millim.; tympanum quite close to the eye; fingers slender.

W. Africa.

δ, ε. ♂ ♀.	Coast of Guinea.	
ζ. ♀.	Coast of Guinea.	Sir A. Smith [P.].
η. Hgr.	Sierra Leone.	

VAR. B.—Larger, from snout to vent 136 millim.; interorbital space rather concave; spots generally large, well defined.

S. Africa.

θ, ι. ♀ & yg.	S. Africa.	Sir A. Smith [P.].
κ. ♀.	Cape of Good Hope.	Sir A. Smith [P.].
λ–μ. ♀.	Port Elizabeth.	
ν. ♀.	Port Natal.	T. Ayres, Esq. [C.].

cinereus, Bre.

28. **Bufo ~~bonguelensis~~.** (PLATE XIX. fig. 3.)

Bufo guineensis, part., *Günth. Cat.* p. 59.

Very closely allied to *B. regularis*, from which it differs in the following points:—Tympanum not two thirds the width of the eye.

First finger extending slightly beyond second. No indication of a tarsal fold. From snout to vent 53 millim.

W. Africa.

a. ♀.	Benguela.	Prof. Barboza du Bocage [P.].
b. ♀.	Fernando Po.	Mr. Fraser [C.].
c. ♀.	W. Africa.	Mr. Fraser [C.].

29. Bufo angusticeps.

Bufo angusticeps, *Günth. Cat.* p. 59.
Bufo pantherinus, part., *Dum. & Bibr.* p. 687.
—— angusticeps, *Smith, Ill. S. Afr.* pl. 69. f. 1; *Bouleng. Proc. Zool. Soc.* 1880, p. 564.
—— gariepensis, *Smith, l. c.* f. 2.

Crown without bony ridges; snout short, blunt; interorbital space narrower than the upper eyelid; tympanum distinct, about one third the width of the eye. Fingers short, first not extending beyond second; toes short, webbed at the base, with simple or double subarticular tubercles; two moderate metatarsal tubercles; a more or less distinct (exceptionally, indistinct) tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the posterior corner of the eye in males, hardly the tympanum in females. Upper parts with irregular, depressed, distinctly porous warts; parotoids generally small, elliptic or sub-oval, depressed; belly almost entirely smooth. Brown or olive-spotted or marbled above; generally a yellowish vertebral line; beneath generally immaculate. Male with a subgular vocal sac.

S. Africa.

a–d. ♂ ♀.	Cape of Good Hope.	Sir A. Smith [P.]. (As typical of *B. angusticeps*.)
e. ♀.	Cape of Good Hope.	Lords of the Admiralty [P.].
f–g. Hgr.	Cape of Good Hope.	Sir A. Smith [P.]. (As typical of *B. gariepensis*.)
h–k. Hgr.	Vleis, Kaffraria.	F. P. M. Weale, Esq. [P.].
l. ♀.	S. Africa.	

30. Bufo olivaceus.

Bufo olivaceus, *Blanford, Ann. & Mag. N. H.* (4) xiv. p. 35, *and E. Persia*, ii. p. 434, pl. 28. f. 3.

Crown without bony ridges; snout short, obliquely truncate from above backwards; interorbital space slightly concave, a little broader than the upper eyelid; tympanum very distinct, vertically oval, its greatest diameter two thirds that of the eye. Fingers moderate, first longer than second; toes moderate, two-thirds webbed; subarticular tubercles simple; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of

Bufo dodsonii, Blgr.

z. ♂ W. Somaliland. D. Smith (Type)

---

d. Hgr. W. Africa. Bocage.
e. ♀ Lower Congo. Linden.

m. Several specs. ♂, hgr., yg., and larvæ. Port Elizabeth. Leslie
n. Ova. "
o-p. ♀ & yg. Petermaritzburg. Ducket.

Bufo superciliaris, Blgr.

a. Fem. spec. Rio del Rey, W. Africa. Johnston.
(Type.)

Bufo pentoni And.

a. g. ♂♀ Lahej, nr Aden Yerbury.
b. ♀ Haithalkin, " "

n. g. ♀ syg. Pretoria, Transvaal. Distant.

the eye. Skin of upper surfaces nearly smooth; parotoids depressed, very large, extending to the sacral region; a fold across the occipital region. Uniform olive above; whitish beneath, immaculate. Male with a subgular vocal sac.

Baluchistan.

a. ♂.	Dasht, Baluchistan.	W. T. Blanford, Esq. [P.].

31. Bufo carens.

Schismaderma carens, *Günth. Cat.* p. 138.
Bufo carens, *Smith, Ill. S. Afr., Rept.* pl. 68. f. 1; *Boulenq. Proc. Zool. Soc.* 1880, p. 567.
—— vertebralis, *Smith, l. c.* f. 2.
Schismaderma lateralis, *Smith, l. c. App.* p. 28.

Crown without bony ridges; snout short, truncated; interorbital space broader than the upper eyelid; tympanum very distinct, circular, as large as the eye, close to the latter. First finger extending a little beyond second; toes half webbed; subarticular tubercles simple; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye in males, the tympanum in females. Upper parts with irregular, depressed, distinctly porous warts, forming a glandular lateral fold; parotoids indistinct. Above olive, darker spotted; beneath whitish, blackish-spotted. Male with a subgular vocal sac.

S. Africa.

a–c, d–f. ♂ ♀.	Natal.	Sir A. Smith [P.]. (As typical of *B. carens*.)
g–m. Yg.	Cape of Good Hope.	Sir A. Smith [P.]. (As typical of *B. vertebralis*.)

32. Bufo blanfordii. (PLATE XIX. fig. 4.)

Head rather large, without bony ridges; snout short, rounded, with indistinct canthus rostralis; interorbital space as broad as the upper eyelid, flat; tympanum distinct, vertically oval, not quite half the diameter of the eye. Fingers moderate, first extending very slightly beyond second; toes moderate, half webbed, with simple subarticular tubercles; two small metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the centre of the eye in the female, in front of the eye in the male. Skin covered with small warts; parotoids none. Olive above, indistinctly marbled with darker; a dark line from the tip of the snout, through the nostril to the eye; a few large spots on the sides of the head; beneath immaculate. Male with a subgular vocal sac. From snout to vent 43 millim.

Abyssinia. Somaliland.

a–b. ♀ & hgr.	Ain Samhar.	W. T. Blanford, Esq. [P.].
c. ♂.	Sooroo.	W. T. Blanford, Esq. [P.].

d–f. ♂ ♀ Inland of Berbera. Lort-Phillips.

33. Bufo compactilis.

Bufo anomalus, *Günth. Cat.* p. 57.
Bufo compactilis, *Wiegm. Isis*, 1833, p. 661; *Peters, Mon. Berl. Ac.* 1863, p. 89, & 1873, p. 624.
Anaxyrus melancholicus, *Tschudi, Faun. Per., Herp.* p. 78, pl. 11. f. 5.
? Bufo speciosus, *Girard, Proc. Ac. Philad.* 1854, p. 86, *and U.S. Mex. Bound. Surv.* ii. p. 26, pl. 40. f. 5–10.
Bufo levifrons, *Bocourt, Bull. Soc. Philom.* (7) i. p. 187.
Dromoplectrus anomalus, *Camerano, Atti Acc. Tor.* xiv. p. 882.

Crown without bony ridges; snout short, blunt; interorbital space broader than the upper eyelid; tympanum small [indistinct in this specimen]. First finger extending beyond second; toes half webbed, with double subarticular tubercles; two compressed metatarsal tubercles, the inner very large, shovel-shaped as in *Pelobates*; tarsal fold indistinct. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches hardly the eye. Upper surfaces with small spiny warts; parotoids moderate, subquadrangular, depressed. Olive above, with irregular blackish spots; beneath with a few small black spots. [Male with a subgular vocal vesicle.]

Texas; Mexico; Peru.

a. Hgr. Mexico. (Type of *Bufo anomalus*.)

34. Bufo simus.

Bufo simus, *Günth. Cat.* p. 139.
Bufo simus, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 254, t. 3. f. 22.

Crown without bony ridges; snout short; tympanum hidden. First finger longer than second; toes half webbed; no tarsal fold. Back with larger and smaller flat warts; parotoids moderate, irregularly rounded. Above grey or brown, beneath with blackish irregular spots.

Chiriqui River.

35. Bufo spinulosus.

Bufo chilensis, part., *Günth. Cat.* p. 56.
? Rana thaul, *Molina, Hist. Nat. Chili*, p. 194.
Bufo thaul, *Garn. & Less. Voy. Coq.* ii. pl. 7. f. 6.
—— spinulosus, *Wiegm. Nov. Act.* xvii. t. 22. f. 3; *Tschudi, Batr.* p. 88; *Peters, Mon. Berl. Ac.* 1863, p. 80, & 1873, p. 623; *Steindachn. Novara, Amph.* p. 42.
—— chilensis, *Tschudi, Batr.* p. 88; *Eydoux & Soul. Voy. Bonite*, t. 9. f. 1, 2; *Bell, Zool. Beagle*, p. 49; *Dum. & Bibr.* p. 678; *Guichen. in Gay, Hist. Chile, Herp.* p. 125, pl. 5. f. 3; *Espada, Viaj. Pacif., Vert.* p. 204.
—— trifolium, *Tschudi, Faun. Per., Herp.* p. 72, pl. 11. f. 3.
—— lineo-maculatus, *Guichen. l. c.* p. 128, pl. 5. f. 5.
—— rubro-punctatus, *Guichen. l. c.* pl. 5. f. 4; *Steindachn. l. c.*
—— lugubrosus, *Girard, U.S. Expl. Exped., Herp.* p. 85, pl. 6. f. 10–15.

b. d, egg & hgr. Duval Co, Texas. Taylor.
h. yg. Agua, Delgada, Guadalajara. Buller.

w. ♀ Valparaiso. Challenger Expd.
x. ♀ Tarapacá, Chili, 10-12,000 ft. James.
y. ♀ S. Chili. "

Bufo vulgaris (cont.)

f.² ♂ Chefoo Reid
g.² ♀ Argyleshire. Eagle Clarke
h.² i.² ♂ ♀ (found spawning 13.6.94)
Edinburgh Evans.
k.² ♀ Bojan. Hungary. Méhelÿ.

Crown without bony ridges; snout short, blunt; interorbital space concave, as broad as the upper eyelid; tympanum very small, very distinct. First finger extending beyond second; toes half webbed, or rather more, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye in males, the tympanum in females. Upper surfaces with irregular, distinctly porous, sometimes spiny, warts; parotoids short, subtriangular or rounded. Olive or brownish above, with blackish, more or less confluent spots; beneath uniform or black-spotted. Male without vocal sac.

Chili; Peru.

a–c, d, e, f, g, h, i, k–l, m–n. ♂, ♀, hgr., & yg.	Chili.	
o. Yg.	Chili.	C. Darwin, Esq. [P.].
p. ♂.	Valparaiso.	C. Darwin, Esq. [P.].
q. Yg.	Rio Chupat.	C. Darwin, Esq. [P.].
r. ♂.	Valdivia.	
s–t. ♂ ♀.	High Peru.	Prof. Taczanowski [C.].
u–v. ♀ & yg.	Cusco.	J. B. Pentland, Esq. [P.].

36. Bufo vulgaris.

Bufo vulgaris, *Günth. Cat.* p. 569.

Rösel, Hist. Ran. p. 85. pls. 20 & 21.

Rana bufo, *Linn. S. N.* i. p. 354.

—— rubeta, *Linn. l. c.*

Bufo vulgaris, *Laur. Syn. Rept.* pp. 28 & 125; *Daud. Rain.* p. 72, pl. 24, *and Rept.* viii. p. 139; *Eichw. Zool. spec. Ross. Polon.* p. 167; *Bonap. Faun. Ital.*; *Bell, Brit. Rept.* p. 105; *Dum. & Bibr.* p. 671; *Guichen. Expl. Sc. Alg., Rept.* p. 27; *Strauch, Mém. Ac. Sc. St. Pétersb.* (7) vii. p. 79; *Fatio, Vert. Suisse*, iii. p. 587; *Schreib. Herp. Eur.* p. 134; *De Betta, Faun. Ital., Rett. Anf.* p. 72; *Lataste, Herp. Gir.* p. 283, pl. 11; *Leydig. An. Batr.* p. 12; *Lessona, Atti Ac. Linc. Mem. Cl. Sc. fis.* i. p. 1080, pl. 4; *Boulenq. Proc. Zool. Soc.* 1880, p. 569.

—— cinereus, *Schneid. Hist. Amph.* i. p. 185; *Daud. Rain.* p. 73, pl. 25, *and Rept.* viii. p. 141; *Merr. Syst. Amph.* p. 182; *Koch, Ber. Senck. Ges.* 1872, p. 174.

—— rubeta, *Schneid. l. c.* p. 227.

—— roeselii, *Daud. Rain.* p. 77, pl. 27, *and Rept.* viii. p. 150, pl. 96.

—— ventricosus, *Daud. Rain.* p. 83, pl. 30, *and Rept.* viii. p. 168; *Merr. l. c.* p. 131.

—— spinosus, *Daud. Rept.* viii. p. 199.

—— palmarum, *Cuv. R. A.* 2nd ed. ii. p. 109.

—— colchicus, *Eichw. l. c.*

—— alpinus, *Schinz, Faun. Helv.* p. 144.

—— vulgaris japonicus, *Schleg. Faun. Japon., Rept.* p. 106. pl. 2; *Lataste, Le Naturaliste*, 1880, p. 219, *and Bull. Soc. Zool. France*, 1880, p. 66.

Phryne vulgaris, *Fitzing. Syst. Rept.* i. p. 32.

Bufo gargarizans, *Cantor, Ann. & Mag. N. H.* ix. p. 483.

Bufo commutatus, *Steenstr. Ber.* 24. *Vers. deutsch. Naturf. &c. Kiel*, p. 134.
—— griseus, *Hallow. Proc. Ac. Philad.* 1860, p. 506.
—— japonicus, *Camerano, Atti Ac. Tor.* xiv. 1879, p. 884.

Crown without bony ridges; snout short, blunt; interorbital space broader than the upper eyelid; tympanum small, round, often indistinct. First finger extending scarcely beyond second; toes at least half webbed; subarticular tubercles double; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches generally the eye in the male, the shoulder in the female. Upper parts with more or less prominent, often spinose, not distinctly porous warts; parotoids elliptic, rather elongate, very prominent. Brownish above, spotted or marbled with darker; beneath whitish, more or less spotted with black; parotoids margined on their outer side with black, which in Chinese and Japanese specimens extends as a vitta along the upperside of the flanks. Male without vocal sac.

Europe; Asia; N.W. Africa.

a. Skeleton.	England.	
b. ♀.	Devonshire.	Mus. Leach.
c, *d*. ♀.	Isle of Arran.	Mus. Leach.
e. ♀.	Spring Grove.	Mus. Leach.
f. ♂.	Paris.	
g–*h*. ♀.	Coruña, Spain.	M. V. L. Seoane [C.].
i. ♀.	Valencia, Spain.	Lord Lilford [P.].
k, *l*. ♂ ♀.	Porto.	E. Allen, Esq. [P.].
m–*n*. ♂ ♀.	Bononia.	Prof. J. J. Bianconi [P.].
o. ♀.	Sicily.	
p. Stuffed.	Athens.	C. W. Merlin, Esq. [P.].
q–*t*. ♂ ♀.	Chefoo.	R. Swinhoe [P.].
u, *v*, ~~*w*~~. ♀ & hgr.	Shanghai.	R. Swinhoe [P.].
x–*y*, *z*–*a*. ♀, hgr., & yg.	Ningpo.	
β–*ε*. Hgr. & yg.	Chusan.	
ζ, *η*–*θ*. ♀ & hgr.	Chusan.	Dr. Cantor.
ι–*κ*. Hgr.	Chusan.	E. India Comp.
λ–*ξ*. ♂, ♀, & hgr.	Japan.	Leyden Museum.
o. ♂.	Japan.	Sir A. Smith [P.].

37. Bufo tuberosus.

Bufo tuberosus, *Günth. Cat.* p. 60, pl. iii. f. C.
Bufo tuberosus, *Bouleng. Proc. Zool. Soc.* 1880, p. 572.

Crown without bony ridges; snout short, prominent, obliquely truncated; interorbital space slightly concave, about as broad as the upper eyelid; tympanum distinct, about half the width of the eye. Fingers slender, first much longer than second; toes rather short, webbed at the base; subarticular tubercles very large and prominent, simple; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout in the male, between

ee-ii.	♂♀	Seoul, Corea.	Fischer.
kk-ll.	♂ yg.	Chaborowka.	"
mm	♀	Ichang.	Pratt.
nn.	♀	Jersey.	Boulenger.
oo.	♂	Algiers.	Anderson
pp	Hgr.	Chemulpo, Corea.	Campbell.
qq-tt.	Larvæ.	Djelland, Denmark.	Copenhagen Mus.
uu-yy.	"	Nice.	Bedriaga.
z	♀	Moh-si-Min, Prov. Sze Chuen, 17000 ft.	Pratt
z²	♂♀ in copula.		
		St. Germain (Paris)	Hérou-Royer.
		Geres, Portugal.	Lopes Vieira
π	♂	Kobe, Japan.	Challenger exped.
~~ρ~~	~~♂~~	~~Yokohama.~~	" "
ρ	♀	Coruña, Spain.	Seoane
σ.	Tadpoles.	Epping Forest.	Boulenger.
τ.	♂	Dogoshima, Japan.	Anderson.
υ.	Hgr.	Gensan, Corea.	Leech.
φ-aa.	♂ yg.	Sjælland.	Copenhagen Mus.
bb-cc.	♀ & hgr.	Ichang.	Pratt.
dd.	yg.	Gerardmer, Vosges.	Dollfus.

Bufo formosus, Blgr.

a-b.	♂♀	Yokohama.	"Challenger". (Types)

d. g. ♂ Rio del Rey. Johnston.

a. b. ♂ ♀. *Bufo maerotis* Blgr.
Kakhien Hills. Fea. (Types)

the eye and the nostril in the female. Upper parts with very prominent, spinous, indistinctly porous warts; parotoids very prominent, oval, oblique, rough; lower surfaces covered with minute granules intermixed with larger spinous ones. Uniform brown, lighter beneath, immaculate or with indistinct spots. Male without vocal sac.

W. Africa.

a. ♂.	Fernando Po.	(Type.)
b. Yg.	Gaboon.	
c. ♀	—— ?	Sir A. Smith [P.].

38. Bufo taitanus.

Bufo taitanus, *Peters, Mon. Berl. Ac.* 1878, p. 208, pl. 2. f. 9.

Crown without bony ridges; snout rather prominent; tympanum hidden. Fingers and toes short, the latter shortly webbed; two small metatarsal tubercles; no tarsal fold. Upper surfaces covered with prominent warts; parotoids flat and elongate. Dark yellowish brown, with irregular longitudinal and transverse black spots; limbs irregularly barred; belly marbled and spotted with black.

Taita, E. Africa.

39. Bufo sikkimensis. = *B. himalayanus.*

~~Bombinator sikkimensis, *Blyth, Journ. As. Soc.* xxiii. p. 200.~~
~~Scutiger sikkimensis, *Theobald, Cat. Rept. As. Soc. Mus.* 1868, p. 83.~~
Bufo sikkimensis, ~~*Anders. Proc. Zool. Soc.* 1871, p. 204~~; *Stoliczka, Proc. As. Soc.* 1874, p. 112.

Crown without bony ridges; snout short, rounded; tympanum hidden. Toes nearly half webbed. Upper surfaces covered with small pointed tubercles; parotoids small or moderate. Upper side of back and limbs ashy or olive, with numerous more or less confluent vinaceous brown spots; parotoids and the large tubercles distinctly reddish; a few brown spots on the sides of the head; below pale yellowish throughout, usually densely marbled with olive-brown. ~~Breeding male with two plate-like callosities on either side of the thorax, thickly studded with minute dark-brown points, inner surface of the three inner fingers with similar rugosities.~~

Himalayas.

40. Bufo himalayanus. (PLATE XX.)

Bufo melanostictus, var. himalayanus, *Günth. Rept. Brit. Ind.* p. 422.

Physiognomy of *B. vulgaris*. Crown deeply concave, with low, blunt supraorbital ridges; snout short, blunt; interorbital space broader than the upper eyelid; tympanum very small, rather indistinct. First finger not extending beyond second; toes half or two-thirds webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried

forwards along the body, the tarso-metatarsal articulation reaches in front of the eye, or the tip of the snout. Upper parts with irregular, distinctly porous warts; parotoids very prominent, large, elongate, at least as long as the head. Uniform brown. Male without vocal sacs.

Himalayas.

a. ♂.	Nepal.	B. H. Hodgson, Esq. [P.].
b–c. ♂ ♀.	Sikkim.	Dr. Hooker [P.].
d. Hgr.	Sikkim.	W. T. Blanford, Esq. [P.].
e. ♀.	Darjeeling.	W. T. Blanford, Esq. [P.].
f–g. ♂ ♀.	Darjeeling.	T. C. Jerdon, Esq. [P.].

41. Bufo melanostictus.

Bufo melanostictus, *Günth. Cat.* p. 61.
Bufo isos, *Günth. l. c.* p. 62.

Bufo melanostictus, *Schneid. Hist. Amph.* p. 216; *Gravenh. Delic.* p. 57; *Cantor, Cat. Mal. Rept.* p. 142; *Girard, U.S. Expl. Exped., Herp.* p. 92, pl. 5. f. 10–14; *Günth. Rept. Brit. Ind.* p. 422; *Steindachn. Novara, Amph.* p. 42; *Stoliczka, Proc. As. Soc.* 1870, p. 155.

—— scaber, *Daud. Rain.* p. 94, pl. 34. f. 1, *and Rept.* viii. p. 194; *Tschudi, Batr.* p. 88; *Dum. & Bibr.* p. 699; *Schleg. Abbild.* p. 64, pl. 20. f. 2.

—— bengalensis, *Daud. Rain.* p. 96, pl. 35. f. 1, *and Rept.* viii. p. 197; *Lesson, in Bélang. Voy. Ind. Or., Rept.* p. 334.

—— isos, *Lesson, l. c.* p. 333, pl. 7; *Dum. & Bibr.* p. 702.

—— dubia, (*Shaw*) *Gray, Ind. Zool.*

—— carinatus, *Gray, l. c.*

—— gymnauchen, *Bleeker, Nat. Tijdschr. Nederl. Ind.* 1858, xvi. p. 46.

Phrynoidis melanostictus, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Bufo spinipes, (*Fitzing.*) *Steindachn. l. c.* p. 43, pl. 5. f. 6.

Head with more or less elevated bony ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, and a short orbito-tympanic; snout short, blunt; interorbital space much broader than the upper eyelid; tympanum very distinct, at least two thirds the width of the eye. First finger extending generally, but not always, beyond second; toes at least half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; tarsal fold none (sometimes present, according to Stoliczka). The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the eye. Upper surfaces with more or less prominent, generally spiny, warts; parotoids very prominent, kidney-shaped or elliptic, more or less elongate. Yellowish or brownish above, the spines of the warts and the ridges of the head generally black; beneath immaculate or more or less spotted. Male with a subgular vocal sac.

E. Indies; S. China.

a. Hgr.	Canton.	Haslar Coll.
b–c. ♂ & hgr.	Hongkong.	J. C. Bowring, Esq. [P.].

h. i. ♂♀♂♀. Darjeeling. Blanford.

p'. ♀ Singapore Dobson.
q'. ♂♀. Perak. Wray.
r'. " Anamallays 4700 ft. Davison.
s'-w'. ♂♀♂♀. Deli, Sumatra. Moesch.
v'-x'. ♀ ♂. Travancore hills, 7000 ft. Ferguson.
y'-z'. ♀ Hoi-How, Hainan Neumann.

aa-bb.	♂♀	N^r Taiwanfoo, Formosa.	Holst.
cc-dd.	♀	Benares.	Flower
ee	♀	St. Natuna Island.	Hose
ff.	Hg.	Pauls Saut, Natuna Is^ds	"

b.	♂	Pulney Hills.	Thurston

d–f. Hgr. & yg.	China.	J. C. Bowring, Esq. [P.].
g. ♂.	China.	J. Reeves, Esq. [P.].
h. ♀.	China.	
i. ♀.	Sikkim.	Dr. Hooker [P.].
k. ♀.	Sikkim.	Messrs. v. Schlagintweit [C.].
l–m. ♀ & hgr.	Bengal.	Zoological Society [P.].
n–p. ♂, ♀, & hgr.	Madras.	T. C. Jerdon, Esq. [P.].
q. Adult, stuffed.	Madras.	
r–s, t–w. ♂, hgr., & yg.	Ceylon.	
x–y. ♀.	Ceylon.	Dr. Kelaart [P.].
z. Hgr.	S. Ceylon.	
a. ♂.	Gamboja.	M. Mouhot [C.].
β–γ. ♀ & yg.	Siam.	M. Mouhot [C.].
δ. ♀.	Pinang.	Dr. Cantor.
ε. ♀.	Bintang.	Dr. Bleeker [P.]. (Type of *Bufo gymnauchen.*)
ζ–η. ♀.	Java.	Leyden Museum.
θ. ♀.	Java.	
ι, κ. ♂ ♀.	Java.	Dr. Ploem [C.].
λ, μ, ν–ξ. ♂ ♀.	Borneo.	
o. ♀.	Philippine Islands.	
π. ♀.	Mauritius (imported).	M. L. Bouton [P.].

42. Bufo microtympanum. (PLATE XXII. fig. 1.)

Head with prominent bony ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, and a short orbito-tympanic; snout short, blunt; interorbital space broader than the upper eyelid; tympanum very small, not half the width of the eye, generally indistinct. First finger extending beyond second; toes about half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; tarsal fold none. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or between the eye and the tip of the snout. Upper surfaces with irregular, distinctly porous warts. Parotoids prominent, elliptic, twice or twice and a half longer than broad. Brown above, yellow beneath, marbled with brown. Male with a subgular vocal sac. From snout to vent 77 millim.

This species is closely allied to *B. melanostictus*, from which it is well distinguished by its very small tympanum.

Malabar.

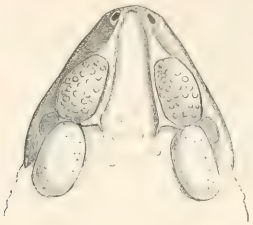
a. Several spec.: ♂, ♀, hgr., & yg.	Malabar.	Col. Beddome [P.].

43. Bufo intermedius.

Bufo intermedius, *Günth. Cat.* p. 140, pl. ix. f. A.
Bufo intermedius, *Camerano, Atti Acc. Tor.* xiv. p. 887.

A supraorbital and a postorbital bony ridge, the latter hidden by the skin and rectangular with the former; only a trace of parietal and preorbital ridges; snout short, blunt; interorbital space broader than the upper eyelid; tympanum moderately distinct,

about half the width of the eye. First finger longer than second; toes half webbed; subarticular tubercles generally double; two



Upper view of head.

moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces covered with small warts; parotoids elliptic, moderate, close to the eye. Olive above, with irregular, sometimes confluent, dark spots; belly immaculate, or with slight spots. Male with a subgular vocal sac.

Ecuador; Mexico.

a–d. ♂ ♀. Andes of Ecuador. Mr. Fraser [C.]. (Types.)

44. Bufo dipternus.

Bufo dipternus, *Cope, Amer. Nat.* xiii. p. 437.

Two faint straight supraorbital ridges, and a postorbital, but no supratympanic ridge; snout truncate; tympanum rather indistinct, two thirds the diameter of the eye. Toes shortly webbed at the base; two shovel-shaped metatarsal tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum. Skin rough with small tubercles; parotoid a wide oval, in contact with the postorbital ridge. Above ashen, with large brown, black-edged spots; below immaculate; metatarsal spurs black.

Montana.

45. Bufo lentiginosus.

Bufo lentiginosus, *Günth. Cat.* p. 63.
Catesby, Nat. Hist. Carol. ii. pl. 69; *Bart. Travels in Carol.* p. 279.
? Rana musica, *Linn. S. N.* i. p. 354.
Bufo lentiginosus, *Shaw, Zool.* iii. p. 173.
—— musicus, *Tschudi, Batr.* p. 88; *Harlan, Journ. Ac. Philad.* v. p. 344.

A supraorbital and a postorbital bony ridge, forming together a right angle; snout short, blunt: interorbital space as broad as, or a little narrower than, the upper eyelid; tympanum very distinct, generally nearly as large as the eye. First finger extending beyond

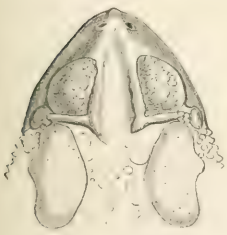
e-g. ♂ ♂ yg. Milpas, Mexico. Forrer.
h. Yg. Presidio,
i-l. ♀ ♀ hyr. Rocho La Berberia, Sierra de Bolaños. Buller.
m. ♀ La Cumbre de los Arrastrados, Talpa, Mascota, Jalisco. Buller.

u-v. ♀ & yg. Hudson Bay Terr?. Smithson. In
(As typical of Bufo cognatus, Yarrow.)
w-x. ♂ & yg. N. America.

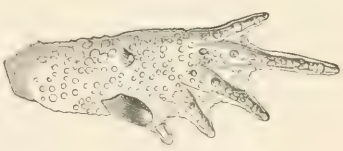
second; toes half webbed; two metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the eye. Upper surfaces with irregular warts; parotoids moderate, elliptic or kidney-shaped. Brownish olive above, with dark-brown spots, two of which form a chevron between the eyes; generally a light vertebral line; lower surfaces immaculate or dark-spotted. Male with a subgular vocal sac.

VAR. A. **americanus.**

Bufo americanus, (*Leconte*) *Holbr. N.-Amer. Herp.* v. pl. 4; *Dum. & Bibr.* p. 695; *Hallow. Proc. Ac. Philad.* 1856, p. 251; *Girard, U.S. Mex. Bound. Surv.* ii. p. 25; *Wied, Nova Acta*, xxxii. p. 121.
—— quercicus, *Holbr. N.-Amer. Herp.* v. pl. 3.
—— dorsalis, *Hallow. Proc. Ac. Philad.* 1852, p. 181, *and in Sitgreaves, Exped. Zuni & Color. Riv.* p. 142, pl. 19.
—— woodhousii, *Girard, Proc. Ac. Philad.* 1854, p. 86.
Chilophryne americana, *Cope, Proc. Ac. Philad.* 1863, p. 357.



Upper view of head.



Lower surface of foot.

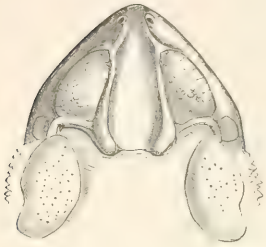
Supraorbital ridges low; subarticular tubercles under the toes generally double; inner metatarsal tubercle large, compressed, spade-shaped; outer tubercle small.

a. Yg.	Great Bear Lake.	Sir J. Richardson [P.].
b–d. Yg.	Lake Winnipeg.	Sir J. Richardson [P.].
e. ♀.	New York.	
f, g. ♀ & albinos, yg.	N. America.	Dr. J. Green [P.].
h–i, k. ♀ & yg.	N. America.	Lord Ampthill [P.].
l–m, n. ♂ ♀.	N. America.	
o. ♀.	America.	
p. ♀.	Mexico.	
(This specimen is intermediate between vars. A and B.)		
q. Many spec., yg.	Brazil (??).	Dr. Gardiner [P.].
r. ♀.	Puerto Cabello (?).	

VAR. B. **musicus.**

Bufo musicus, *Latr. Rept.* ii. p. 127; *Daud. Rain.* p. 9, pl. 33. f. 3, *and Rept.* viii. p. 190; *Merr. Tent.* p. 185; *Gravenh. Delic.* p. 59;

Holbr. N.-Amer. Herp. v. pl. 1; *Dum. & Bibr.* p. 689; *Leconte, Proc. Ac. Philad.* 1855, p. 430.
Bufo lentiginosus, *Girard, Proc. Ac. Philad.* 1854, p. 86.
Chilophryne lentiginosa, *Cope, Proc. Ac. Philad.* 1863, p. 357.



Upper view of head.

Lower surface of foot.

Supraorbital ridges swollen behind and produced beyond the angle of the postorbitals; subarticular tubercles generally simple; metatarsal tubercles moderate.

s, t. Many spec.: ♂, ♀, & yg. N. America. E. Doubleday, Esq. [P.].

Mr. Cope (Check-list N. Amer. Rept.) distinguishes besides the three following varieties :—

Var. C. **frontosus.**

Bufo frontosus, *Cope, Proc. Ac. Philad.* 1866, p. 301.

Var. D. **cognatus.**

Bufo cognatus, (*Say*) *Holbr. N.-Amer. Herp.* v. p. 21.

Var. E. **fowleri.**

Bufo fowleri, *Putnam, MS.*

46. Bufo occipitalis.

Bufo occipitalis, *Camerano, Atti Ac. Tor.* xiv. p. 889.

Crown deeply concave, on each side with a straight bony ridge, very prominent and swollen behind (resembling a parotoid); a slight orbito-tympanic ridge. Snout pointed, prominent; tympanum small, not very distinct. First and second fingers equal; toes nearly entirely webbed; two moderate metatarsal tubercles: no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the tip of the snout. Skin covered with small granular tubercles; parotoid moderate, its lower border forming an angle.

Mexico.

x. b. ♀ Pensacola, Florida. Bollman.

Bufo parvus, Blgr.

a. Many spcs. ♂♀. Malacca. Hervey (Type)
b. ♀ Malay Peninsula. Thomson.
c. ♀ Deli, Sumatra. Moesch.
d. ♀ Siboga, Sumatra. Modigliani.

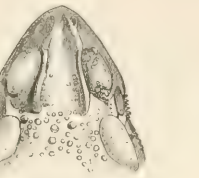
n. ♂ Batavia. Kirkpatrick
o. ♂ Macassar, Celebes. Beccari.
p-g. ♀ Kina Balou. Everett.

Bufo philippinicus, Blgr.

a. ♀ Puerto Princesa. Everett. (Type)
b-h. ♂♀ Palawan "
l. ♀♀ Balabac. "

47. Bufo biporcatus.

Bufo biporcatus, *Günth. Cat.* p. 62.
Bufo biporcatus, (*Schleg.*) *Tschudi, Batr.* p. 88; *Gravenh. Delic.* p. 53; *Dum. & Bibr.* p. 714.
Chilophryne biporcata, *Cope, Proc. Ac. Philad.* 1862, p. 357.



Upper view of head.

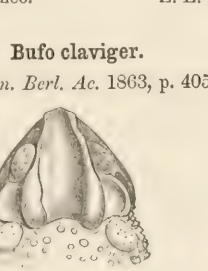
Crown with bony ridges, viz. a supraorbital and a parietal, forming together a straight or nearly straight line, and a short orbito-tympanic; snout short, subacuminate, with prominent canthus rostralis; interorbital space a little broader than the upper eyelid; tympanum very distinct, as large as the eye. First finger generally not extending beyond second; toes half or two-thirds webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum or the eye. Upper surfaces with very prominent, conical, spiny tubercles; parotoids very prominent, small, subtriangular or oval. Brownish above, marbled with darker; beneath more or less spotted with brown. Male with a subgular vocal sac.

Java, Borneo.

a–b. ♀.	Java.	Leyden Museum.
c, d. ♂ ♀.	Java.	Dr. Ploem [C.].
e–i. ♀ & hgr.	Java.	G. Lyon, Esq. [P.].
k–m. ♀ & hgr.	Borneo.	L. L. Dillwyn, Esq. [P.].

48. Bufo claviger.

Bufo claviger, *Peters, Mon. Berl. Ac.* 1863, p. 405.



Upper view of head.

Closely allied to *B. biporcatus*, from which it differs in the much more developed cranial ridges, which are much swollen behind,

club-shaped, and in the smaller tympanum, the diameter of which equals hardly two thirds that of the eye.

Sumatra.

a. ♀.	Sumatra.	Zoological Soc. Coll.
b. ♀.	——?	College of Surgeons [P.].

49. Bufo divergens.

Bufo divergens, *Peters, Mon. Berl. Ac.* 1871, p. 579, *and Ann. Mus. Civ. Gen.* iii. p. 43.

Upper view of head.

Closely allied to *B. biporcatus*, from which it differs in the following points:—Supraorbital ridges divergent, forming an angle with the parietal ridges; tympanum two thirds the width of the eye; first finger extending beyond second; tarso-metatarsal articulation reaching beyond the tip of the snout.

Borneo.

a–b. Hgr.	Matang.	
c–d. Hgr.	Labuan.	L. L. Dillwyn, Esq. [P.].

50. Bufo parietalis. (Plate XXI. fig. 2.)

Crown with very prominent ridges, viz. a canthal, a slight preorbital, a supraorbital, a postorbital, a parietal, and an orbitotympanic; parietal ridges obliquely directed inwards; snout short, blunt; interorbital space broader than the upper eyelid; tympanum distinct, two thirds the width of the eye. First finger extending beyond second; toes half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Upper surfaces covered with irregular warts; parotoids moderate, elliptic, very prominent. Uniform brown above; beneath marbled with brown. Male with a subgular vocal sac. From snout to vent 82 millim.

Malabar.

a–b, *c*. ♂ ♀.	Malabar.	Col. Beddome [C.].

c. several specs. ♂ ♀ & yg. Nias. Sandemann.
d. ♀ " 1882.

Bufo quadriporcatus, Blgr.

a. Hgr. Mulacca. Hervey. (Type).
b. ♀ Hills of Perak. Wray.
c. ♀ Deli, Sumatra. Moesch
d. Yg. Iversen.
e. ♀ Mt. Dulit, Borneo. Hose.
f. Hgr. Sarawak. Doria.
g. ♀ Mt. Dulit, Borneo. Hose.

c-g. Hgr. & yg. Sarawak. Everett.
h. Hgr. Kina Balou. "
i. l, m. ♀, hgr. & yg. St. Natuna Is. "
n-o. Hgr. Hose
p. Hgr. Sandakan, N. Borneo Cator.

d. Yg. Piermed, Travancore 3,300 ft. Ferguson.

Bufo fergusonii, Blgr.

a. ♀ Trebankubu, Travancore. Ferguson.

b. Hgs. Trevandrum. (Type) Ferguson.

i. k. ♂ & yg. Deli, Sumatra. Moesch.

l. m. ♂ & hgs. ♀ Siboga " Modigliani

n. ♂ Mt. Dulit, Borneo. Hose.

o. p. ♀, dry. "

q. r. ♀ Sarawak Everett

s. ys. Penrice hill, Sarawak. "

t. u. ♂ ♀ Bongor, N. Borneo. "

v. x. ♂ ♀ & ys. Kina Balou. "

y. ♀ Akar R., Sarawak. Hose

z. a. ♂ & ys. Sandakan, N. Borneo. Cator.

51. Bufo asper.

Bufo asper, *Günth. Cat.* p. 62.
Bufo asper, *Gravenh. Delic.* p. 58; *Tschudi, Batr.* p. 88; *Schleg. Abbild.* p. 63, pl. 20. f. 1; *Dum. & Bibr.* p. 668; *Günth. Rept. Brit. Ind.* p. 423; *Steindachn. Novara, Amph.* p. 44.
Phrynoidis asper, *Fitzing. Syst. Amph.* i. p. 32.

A broad supraorbital and a thick orbito-tympanic bony ridge; snout short, obliquely truncate: canthus rostralis angular; loreal region vertical; interorbital space broader than the upper eyelid; tympanum distinct, one third the width of the eye. First finger not extending beyond second; toes entirely webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout, or beyond. Upper surfaces with very prominent, conical, spiny tubercles; parotoids very prominent, small, subtriangular. Uniform brown above; beneath immaculate or spotted.

East-Indian Archipelago; E. India.

a. ♀.	Java.	Leyden Mus.
b. ♀.	Java.	
c. ♀.	Borneo.	L. L. Dillwyn, Esq. [P.].
d. Yg.	Borneo.	H. Lowe, Esq. [P.].
e–f. ♀.	Mergui.	Prof. Oldham [P.].
g. Several spec., yg.	Tenasserim.	Col. Beddome [C.].
h. Hgr.	—— ?	College of Surgeons [P.].

52. Bufo celebensis.

Bufo celebensis, *Günth. Cat.* p. 61.
Bufo celebensis, (*Schleg.*) *Steindachn. Novara, Amph.* p. 44.
Chilophryne celebensis, *Cope, Proc. Ac. Philad.* 1862, p. 357.

A broad supraorbital and a thick, elevated, orbito-tympanic bony ridge; snout short, obliquely truncate; canthus rostralis angular; loreal region vertical; interorbital space broader than the upper eyelid; tympanum moderately distinct, not quite half the width of the eye. First finger extending beyond second; toes not quite half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Upper surfaces with conical, spiny warts; parotoids very prominent, more or less elongate, oval or subtriangular. Brown above, with indistinct darker spots; beneath clouded with greyish brown. Male with a subgular vocal sac.

Celebes.

a. ♂.	Celebes.	
b. ♀.	Mount Boliohoeto, N. Celebes.	Dr. A. B. Meyer [C.].
c–d. ♀.	Manado.	Dr. A. B. Meyer [C.].
e. ♂.	Macassar.	Sir A. Smith [P.].
f. Hgr.	India.	

53. Bufo galeatus.

Bufo galeatus, *Günth. Rept. Brit. Ind.* p. 421, pl. 26. f. L.

Closely allied to *B. celebensis*, from which it differs in the following points:—Snout narrower; orbito-tympanic bony ridge higher, confluent with the parotoid, so that externally no division is visible between them; tympanum very distinct, three fourths the width of the eye. Greyish brown above, marbled with chestnut-brown; throat and chest pink; lower surfaces marbled with brown.

Gamboja.

a. ♀. Gamboja. M. Mouhot [C.]. (Type.)

54. Bufo bocourtii.

Bufo bocourti, *Brocchi, Bull. Soc. Philom.* (7) i. p. 186.

A slight canthal, a supraorbital, a postorbital, and a parietal bony ridge; the latter very short, curved inwards; supraorbital and postorbital ridges forming a right angle; snout short, vertically truncate; tympanum hidden. First and second fingers equal; toes half webbed; two moderate metatarsal tubercles; a slight tarsal fold. Upper surfaces with conical warts; parotoids narrow, elongate and subtriangular. Sides of head and body marbled with black; upper lip white-edged beneath the eye; a light vertebral line.

Totonicapam, Mexico.

55. Bufo arenarum.

Bufo arenarum, *Hensel, Arch. f. Naturg.* 1867, p. 148; *Camerano, Atti Acc. Tor.* xiv. 1879, p. 891.

—— marinus, var. platensis, *Espada, Viaj. Pacif., Vert.* p. 202.

Upper view of head.

Crown with moderately prominent bony ridges, viz. a canthal, confluent with a preorbital, a supraorbital, and a very short orbito-tympanic; canthal ridge not confluent with supraorbital; snout short, blunt; interorbital space as broad as upper eyelid; tympanum very distinct, vertically elliptic, nearly as large as the eye. First finger extending beyond second; toes half webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; a tarsal

y. h.	Yg.	Rio Grande do Sul.	Ihering.
i.	Hgr.	Catharina	Dörner.
k-p.	♂♀	Rio Grande do Sul.	Ihering.
g.	Larve	Theresopolis	Göldi

fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches in front of the tympanum. Upper surfaces with irregular warts; parotoids very prominent, narrow, elongate, pointed behind; a lateral series of large warts, confluent with the parotoid. Upper surfaces brown, with large, irregular, black-edged dark spots; beneath with a few dark spots; sometimes a larger dark spot on the sternal region. Size of *B. calamita*.

S. Brazil; Uruguay; Buenos Ayres.

a–b. ♀.	Monte Video.	Dr. Cunningham [P.].
c–d. ♀ & hgr.	Buenos Ayres.	C. Darwin, Esq. [P.].
e–f. ♀.	Oran Salta, Buenos Ayres.	E. W. White, Esq. [C.].

(The latter specimens show a coloration very similar to that of *B. viridis*.)

56. Bufo molitor.

Bufo molitor, *Tschudi, Faun. Per., Herp.* p. 73, pl. 12; *Peters, Mon. Berl. Ac.* 1873, p. 624.
—— andianus, *Cope, Proc. Ac. Philad.* 1868, p. 115.

Appears to differ from *B. marinus* in the following points:—Snout pinched, narrow, angulate; tympanum less than half diameter of eye; parotoid elongate, triangular, narrow, continued into a lateral dermal fold.

W. S. America.

57. Bufo marinus.

Bufo agua, *Günth. Cat.* p. 65.
Seba, i. pl. 76. f. 1.
Rana marina, *Linn. S. N.* i. p. 356; *Laur. Syn. Rept.* p. 31.
Bufo marinus, *Schneid. Hist. Amph.* p. 219; *Shaw, Zool.* iii. p. 155; *Merr. Tent.* p. 182; *Gravenh. Delic.* p. 54; *Girard, U.S. Expl. Exped., Herp.* p. 80, pls. v. f. 1–3, & vi. f. 1–3; *Steindachn. Novara, Amph.* p. 45; *Peters, Mon. Berl. Ac.* 1872, p. 220; *Espada, Viaj. Pacif., Vert.* p. 195.
—— agua, *Latr. Rept.* ii. p. 13; *Daud. Rain.* p. 99, pl. 37, *and Rept.* viii. p. 209; *Spix, Spec. Nov. Test. Ran.* p. 44, pl. 15; *Wied, Beitr. Nat. Bras.* i. p. 551, *and Abbild.*; *Tschudi, Batr.* p. 88; *Dum. & Bibr.* p. 703; *Hensel, Arch. f. Naturg.* 1868, p. 141; *Brocchi, Bull. Soc. Philom.* (7) i. p. 188.
—— horridus, *Daud. Rain.* p. 97, pl. 96, *and Rept.* viii. p. 201.
—— humeralis, *Daud. Rept.* viii. p. 205.
Bombinator horridus, *Merr. Tent.* p. 179.
Bufo maculiventris, *Spix, l. c.* p. 43, pl. 14. f. 1.
—— ictericus, *Spix, l. c.* p. 44, pl. 16. f. 1; *Gravenh. l. c.*
—— lazarus, *Spix, l. c.* p. 45, pl. 17. f. 1.
Phrynoidis agua, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Crown with prominent bony ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, and a short orbito-tympanic; parietal ridge, if present, not very prominent; snout short, blunt; interorbital space much broader than the upper eyelid; tympanum dis-

tinct, about two thirds the width of the eye. First finger extending beyond second; toes half or two-thirds webbed; subarticular tubercles of the last phalanges of fourth toe generally double, the others simple; two moderate metatarsal tubercles; a tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye or the nostril. Upper surfaces with irregular, sometimes spiny warts; parotoids enormous, variable in shape. Brownish above, immaculate or with large dark spots; beneath immaculate or spotted. Male with a subgular vocal sac.

S. and C. America; W. Indies.

a, b, c–d. ♂ ♀.	Jamaica.	
e. ♀.	Trinidad.	Sir A. Smith [P.].
f. Several spec., hgr. & yg.	Barbadoes.	Sir A. Smith [P.].
g. ♀.	Mexico.	
h. Yg.	Mexico.	M. Sallé [C.].
i–k. Hgr. & yg.	Vera Cruz.	
l–n, o. ♂, ♀, hgr., & yg.	Lanquin, Vera Paz.	O. Salvin, Esq. [C.].
p, q, r. ♂ ♀.	W. Ecuador.	Mr. Fraser [C.].
s, t. ♂ ♀.	Guayaquil.	Mr. Fraser [C.].
u. Hgr.	Canelos, Ecuador.	Mr. Buckley [C.].
v–w. Yg.	Cayaria.	W. Davis [C.], Messrs. Veitch [P.].
x, y, z, α, β–γ. ♂, ♀, & yg.	Venezuela.	Mr. Dyson [C.].
δ. ♀.	Upper Essequibo.	Sir R. Schomburgk [P.].
ε. Hgr.	Better Hope, British Guiana.	
ζ. ♀.	Demerara.	
η. Stuffed.	Demerara.	
θ. Hgr.	Vryheids Lust, Demerara.	
ι, κ, λ–μ. ♂, ♀, hgr., & yg.	Para.	R. Graham, Esq. [P.].
ν. Hgr.	Para.	
ξ. ♀.	Carbo, Pernambuco.	W. A. Forbes, Esq. [P.].
ο. ♂.	Bahia.	
π. ♂.	Rio Janeiro.	Lords of the Admiralty [P.].
ρ–s. ♂ & hgr.	Rio Janeiro.	C. Darwin, Esq. [P.].
τ, υ. Hgr., skins.	Rio Janeiro.	Mrs. Parker [P.].
φ. Skeleton.	Brazil.	
χ. Skeleton.	S. America.	
ψ. Adult.	—— ?	

58. Bufo crucifer.

Bufo ornatus, *Günth. Cat.* p. 64.

Bufo crucifer, *Wied, Reise Bras.* ii. p. 132; *Peters, Mon. Berl. Ac.* 1872, p. 221.

—— ornatus, *Spix, Spec. Nov. Test. Ran.* p. 45, pl. 16. f. 2; *Gravenh. Delic.* p. 54; *Wied, Abbild.*; *Hensel, Arch. f. Naturg.* 1868, p. 147; *Steindachn. Novara, Amph.* p. 46; *Espada, Viaj. Pacif., Vert.* p. 204.

—— dorsalis, *Spix, l. c.* p. 46, pl. 17. f. 2; *Hensel, l. c.* p. 144.

o-p. ♂♀ Ventanas, Mexico. Forrer.
6 Several spees. Cozumel I. Gaumer.
t. " , Agr., Yg., Larvæ. Maccaisseana;
Brit. Guiana. Sclater.
v. ♀ Pernambuco. Forbes.
y-x. Agr. Barbados. Feilding.
w. Yg. Pacasmayo, N. W. Peru. Seneckenberg Mus.
aa. ♂ Sta. Cruz, Matto Grosso. Rovida.
bb-cc. ♀ Porto Real, R. Janeiro. Hardy.
dd-ee Agr. Yg. Asuncion, Paraguay. Bohls.
ff-ii. ♂♀ Presidio, Mexico. Forrer.

t. Hg. Paraguay. "Linnæa"
u. ♀ Rio Grande do Sul. Ihering.
v. Hg. Colonia Alpina, Theresopolis. Földi

Bufo scaber, *Spix, l. c.* p. 47, pl. 20. f. 1.
—— cinctus, *Wied, Beitr.* i. p. 564, *and Abbild.*
—— melanotis, *Dum. & Bibr.* p. 710; *Hensel, l. c.* p. 148.
—— gracilis, *Girard, Proc. Ac. Philad.* 1853, p. 424, *and U.S. Expl. Exped., Herp.* p. 83, pl. 6. f. 16–21.
Phrynoidis ornatus, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Differs from *B. marinus* in the following points:—Habit less stout, the tarso-metatarsal articulation reaching nearly always beyond the eye, frequently to the tip of the snout; toes rather longer, with shorter web; tympanum larger, about three fourths the width of the eye; parotoids much smaller, elongate; size much smaller.

From young *B. typhonius* it may readily be distinguished, as it lacks the angular projection of the angles of the jaws.

A tarsal fold is generally present; a lateral line of warts. Brownish above, with symmetrical black spots; a blackish oblique streak on the temporal region; flanks and hinder side of thighs frequently black, marbled with yellow; generally a light, sometimes black-edged, vertebral line; beneath grey-spotted. Male with a subgular vocal sac.

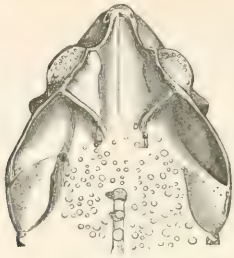
S. America.

a, b. ♂.	Puerto Cabello.	
c. ♂.	Para.	R. Graham, Esq. [P.].
d. ♀.	Rio Janeiro.	Lords of the Admiralty [P.].
e, ~~f, g, h~~ i. ♂, ♀, hgr., & yg.	Brazil.	Lord Stuart [P.].
k. ♀.	Brazil.	Dr. Gardiner.
l–o, p–s. ♂, ♀, hgr., & yg.	S. America.	C. Darwin, Esq. [P.].

59. Bufo typhonius.

Bufo ocellatus, *Günth. Cat.* p. 64.
Otilophus margaritifer, *Günth. l. c.* p. 69.
Seba, i. t. 71, f. 6–9; *Cuv. R. A.*
Rana typhonia, *Linn. S. N.* i. p. 356; *Shaw, Zool.* iii. p. 159.
—— margaritifera, *Laur. Syn. Rept.* p. 30.
Bufo typhonius, *Schneid. Hist. Amph.* i. p. 207; *Merr. Tent.* p. 181; *Gravenh. Delic.* p. 53; *Peters, Mon. Berl. Ac.* 1872, p. 224, and 1873, p. 624.
—— nasutus, *Schneid. l. c.* p. 217; *Spix, Spec. Nov. Test. Ran.* p. 50, t. 14. f. 3.
—— margaritifer, *Latr. Rept.* ii. p. 118; *Daud. Rain.* pl. 33. f. 1, *and Rept.* viii. p. 179; *Dum. & Bibr.* p. 718; *Schmidt, Denkschr. Ac. Wien*, 1858, p. 251, pl. 2. f. 15, 16; *Steindachn. Novara, Amph.* p. 47.
—— (Oxyrhynchus) naricus, *Spix, l. c.* p. 49. t. 14. f. 2.
—— (——) acutirostris, *Spix, l. c.* p. 52, t. 21. f. 3.
—— (——) proboscideus, *Spix, l. c.* p. 53, t. 21. f. 4.
Oxyrhynchus spixii, *Wied, Abbild.*
Otilophus typhonius, *Tschudi, Batr.* p. 89.
Trachycara fusca, *Tschudi, Faun. Per., Herp.* p. 78, pl. 11. f. 5.
Bufo pleuropterus, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 252, pl. 2. f. 17–19.

Oxyrhynchus typhonius, *Espada, Viaj. Pacif., Vert.* p. 171.
—— proboscideus, *Espada, l. c.* p. 178.
—— iserni, *Espada, l. c.* p. 185.



Upper view of head.

Head regularly triangular, the angles of the maxillaries forming a more or less prominent point on each side; crown on each side with an enormous, erect, sharp bony ridge from the orbit to the parotoid, in the adult; this ridge scarcely developed in the young; a more or less distinct parietal ridge; snout prominent, pointed; interorbital space much broader than the upper eyelid; tympanum more or less distinct, about two thirds the width of the eye. First finger not extending beyond second; toes half or two-thirds webbed, with simple subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye or a little beyond. Skin covered with small warts; parotoids rather small, subtriangular, oblique; a lateral fold formed by a series of large conical warts. Brown above, with a few black spots; frequently a light vertebral line; beneath immaculate or spotted. Male with a subgular vocal sac.

S. America.

a. Skeleton.	Cayenne.	
b–d. Hgr. & yg.	Vryheids Lust, Dutch Guiana.	
e–g. Hgr.	Santarem.	
h. Hgr.	Santarem.	Mr. Wickham [C.].
i. ♀.	Para.	R. Graham, Esq. [P.].
k–p. Hgr.	Para.	
q. Hgr.	Brazil.	(Type of *B. ocellatus*.)
r. ♀.	Pebas.	
s. ♀.	W. Ecuador.	Mr. Fraser [C.].
t. ♀.	Guayaquil.	Mr. Fraser [C.].
u. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
v. Several spec., ♀ & hgr.	Cayaria.	W. Davis [C.], Messrs. Veitch [P.].
w. ♀ & hgr.	Tropical America.	H. W. Bates [C.].

r. Hgr. Maccasscema, Brit. Guiana. [illegible]

60. Bufo ceratophrys. (PLATE XXII. fig. 2.)

A supraorbital and an orbito-tympanic bony ridge; an indication of a parietal ridge; snout short, truncate, with angular canthus rostralis; upper eyelid produced in a horn-like appendage, the length of which is greater than the orbital diameter; tympanum distinct, rather more than half the width of the eye. First finger extending beyond second; toes webbed at the base only, with simple subarticular tubercles; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout. Skin covered with very small tubercles; parotoids moderate, subovate; a series of four pointed appendages on each side of the body. Greyish brown above, with dark-brown markings; sides dark-brown marbled; lower surfaces slightly spotted with brownish.

Ecuador.

a. Hgr. Ecuador. Mr. Buckley [C.].

61. Bufo dialophus.

Chilophryne dialopha, *Cope, Proc. Ac. Philad.* 1862, p. 341.

Pre- and postorbital, supra-tympanic, and supraorbital ridges well developed, the last marking a very open angle with that of the canthus rostralis, and sending off posteriorly a parietal, which first converges towards that opposite, and then runs transversely on the occiput to meet it, failing in this by a very slight interval. Snout prominent, conic. Tympanum one fourth the size of the orbit. First finger shorter than second, which equals the third; toes short, one-third webbed; two acute metatarsal tubercles, the internal large, incurved, like a flattened spur. Skin everywhere rigidly rugose; parotoids large, short, subtriangular. Above dark brown, with a pale vertebral band, on either side of which are two blackish dorsal spots, one temporal and one on the canthus rostralis; a black band from orbit to angle of mouth; beneath light brown, blackish shaded.

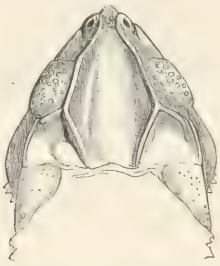
Sandwich Islands.

62. Bufo valliceps.

Bufo nebulifer, *Günth. Cat.* p. 66.
Bufo valliceps, *Wiegm. Isis*, 1833, p. 657; *Peters, Mon. Berl. Ac.* 1863, p. 81.
—— granulosus, *Baird & Girard, Proc. Ac. Philad.* 1852, p. 173.
—— nebulifer, *Girard, Proc. Ac. Philad.* 1854, p. 87; *Hallow. ibid.* 1856, p. 308; *Girard, U.S. Mex. Bound Surv.* ii. p. 25, pl. 40. f. 1–4.
Chilophryne nebulifera, *Cope, Proc. Ac. Philad.* 1862, p. 357.

Crown very concave, with very prominent ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, a parietal, and an orbito-tympanic; parietal ridges obliquely directed inwards; snout sub-

acuminate; loreal regions very oblique; interorbital space much broader than the upper eyelid; tympanum very distinct, nearly as large as the eye. First finger extending beyond second; toes half webbed, with simple subarticular tubercles; two small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the front edge of the tympanum and the tip of the snout. Upper surfaces thickly covered with conical warts; parotoids short, round,



Upper view of head.

or subtriangular, oblique; generally a series of large, strongly conical warts forms a lateral line beginning from the posterior end of the parotoid. Brown or blackish above; a black cross streak between the angles of the supraorbital and parietal ridges; generally a light vertebral line and a broad lateral light band; beneath immaculate or black-spotted, the throat and breast sometimes, especially in males, black. Male with a subgular vocal sac.

Texas; Central America.

a. ♀.	Texas.	
b, *c*. ♀ & hgr.	Mexico.	M. Sallé [C.].
d. Yg.	Mexico.	M. Sallé [C.]. } Types of *B. sterno-*
e. Yg.	Cordova.	M. Sallé [C.]. } *signatus*, juv.
f. ♀.	Vera Cruz.	
g, *h–l*. ♀, hgr., & yg.	Jalapa, Mexico.	Mr. Hoege [C.].
m–q. ♂ ♀.	Vera Paz.	O. Salvin, Esq. [P.].
r. ♀.	Dueñas, Guatemala.	O. Salvin, Esq. [C.].

63. Bufo melanochlorus.

Bufo valliceps, var., *Cope, Journ. Ac. Philad.* 1865, p. 100.
—— melanochlorus, *Cope, Proc. Amer. Philos. Soc.* xvii. p. 85.

Crown with prominent ridges, viz. a very weak preorbital, a supraorbital, a postorbital, a long parietal, and an orbito-tympanic; snout not projecting; tympanum very distinct, half the diameter of the orbit. Toes long, nearly free; two metatarsal tubercles; no tarsal fold. Legs short, the heel reaching the posterior border of

s. Hgr. Presidio, W. Mexico. Forrer.
t.-v. ♀ & Lgr. Duval Co, Texas. Trelease.
w. ♀ Brit. Honduras. Morris.

Bufo luetkenii, Blgr.

w. ♀ Cartago, Costa Rica. Copenhagen Mus.
(One of the types)

the orbit. Skin nearly smooth above, except on the scapular and iliac regions; parotoids quite small, subtriangular, oblique; a lateral dermal fold. Green, with deep black spots; throat and thorax black.

E. Costa Rica.

64. Bufo coniferus.

Bufo coniferus, *Cope, Proc. Ac. Philad.* 1862, p. 158.
Chilophryne conifera, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Crown with prominent ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, a parietal, and a short orbito-tympanic; supraorbital ridges perfectly straight; parietal ridges slightly directed inward; snout prominent; tympanum distinct, half the size of the eye. Hind limb elongate. Toes extensively webbed; two large, flat, oval metatarsal tubercles: no tarsal fold. Dorsal region with obtuse tubercles; numerous elongate conic warts on the sides, largest on a fold from parotoid to groin; parotoid very small, not more than half the extent of the upper eyelid, studded with conic warts. Brownish grey above, with a few large dark-brown spots, which do not interrupt a median line.

Turbo Region, Colombia.

65. Bufo auritus.

Bufo auritus, *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, p. 69, pl. 23. f. 4.

Crown flat, with prominent ridges, viz. a canthal, a supraorbital, a postorbital, a straight parietal, and an orbito-tympanic; tympanum distinct in its anterior half. Fingers remarkably elongate; toes elongate, half webbed; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches beyond the tip of the snout. Tubercles of the skin small, spinulose, most numerous on the sides, wanting below; parotoids quite small, surmounted by several dermal spines. Colour brown; a quadrate patch on vertex from orbits to occiput, an oblique band from the latter outwards on each side, and a spot on each lateral sacral region black; belly marbled with black.

Costa Rica.

66. Bufo veraguensis.

Bufo veraguensis, *Günth. Cat.* p. 142.
Bufo veraguensis, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 253, t. 2. f. 20. & t. 3. f. 21.
Chilophryne veraguensis, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Crown concave, with obtuse bony ridges, viz. a supraorbital, a postorbital, an oblique parietal, and an orbito-tympanic: tympanum entirely hidden. Fingers very slender, first shorter than second;

toes entirely webbed; no tarsal fold. Skin warty; parotoids moderate, prominent, oblong; on each side of the back a series of larger tubercles. Above greyish, marbled with blackish brown; yellowish grey beneath, here and there marbled with darker.

Colombia.

67. Bufo coccifer.

Bufo coccifer, *Cope, Proc. Ac. Philad.* 1866, p. 130, *and Journ. Ac. Philad.* (n. s.) viii. p. 100.

Crown with strong bony ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, an oblique parietal, and an orbito-tympanic; snout narrowly rounded; tympanum one fifth orbit. Toes shortly webbed; metatarsal tubercles small, obtusely prominent; tarsal fold scarcely visible. Heel to axilla. Everywhere minutely tubercular; parotoids round, semiglobular. Grey-brown; a yellow vertebral line, with numerous chestnut-brown bands, one from parotoid and one from groin; under surfaces immaculate.

Costa Rica.

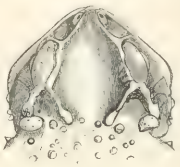
68. Bufo d'orbignyi.

Bufo d'orbignyi, *Günth. Cat.* p. 67.

Bufo d'orbignyi, *Dum. & Bibr.* p. 697; *D'Orbigny, Voy. Amér. mérid.* t. 15. f. 5–7; *Hensel, Arch. f. Naturg.* 1867, p. 141.

Chilophryne d'orbignyi, *Fitzing. Syst. Rept.* i. p. 32; *Espada, Viaj. Pacif., Vert.* p. 188.

Lateral view of head.



Upper view of head.

Crown very concave, with very prominent ridges, viz. a canthal, a preorbital, a supraorbital, a postorbital, a parietal, and an orbito-tympanic; parietal ridges obliquely directed inwards; edge of the upper jaw dilated behind; snout very short, rounded; interorbital space much broader than the upper eyelid; tympanum more or less distinct, about two thirds the width of the eye. First finger not extending beyond the second; toes half webbed, with double subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder or the tympanum. Upper surfaces with small, frequently spinous warts; parotoids very small, subtriangular or rounded, sometimes scarcely distinct. Brownish olive, with indistinct darker spots; a light

e. f. ♂ Rio Grande do Sul. Ihering.
g. h. ♀♀ Rio Grande. "

f. ♂ Andes of Venezuela. Hartert.

vertebral line; beneath immaculate. Male with a subgular vocal sac.

Uruguay; S. Brazil.

a–c. ♂ & yg.	Monte Video.	C. Darwin, Esq. [P. .
d. ♀.	Monte Video.	

69. Bufo sternosignatus.

Bufo sternosignatus, *Günth. Cat.* p. 68, pl. 5. f. C.
Bufo sternosignatus, *Keferst. Götting. Nachr.* 1867, p. 352, *and Wiegm. Arch.* 1868, p. 294.

Crown with a low ridge round the orbit and a strong orbito-tympanic one; snout pointed, vertically truncate; interorbital space flat, broader than the upper eyelid; tympanum distinct, about two thirds the width of the eye. First finger not extending beyond second; toes half webbed, with generally double subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye. Upper surfaces covered with small tubercles; parotoids moderate, subtriangular; a lateral series of larger tubercles, commencing from the posterior angle of the parotoid. Brownish above, with symmetrical dark-brown markings, the most constant of which is a broad cross band between the eyes; a more or less defined light vertebral line, sometimes black-edged; throat and breast spotted or marbled with brown, with a rectangular light cross. Male with a subgular vocal sac.

Venezuela; Colombia; Costa Rica.

a. ♀.	Puerto Cabello.	} Types.
b–c. ♂ ♀.	Venezuela.	
d–e. Hgr.	Bogotá.	

70. Bufo canaliferus.

Bufo canaliferus, *Cope, Proc. Amer. Philos. Soc.* xvii. p. 85.

Head narrow, with strong ridges, viz. a preorbital, a supraorbital, a postorbital, and a very short orbito-tympanic; snout slightly prominent, contracted; interorbital space gutter-like, a little narrower than the upper eyelid; tympanum distinct, somewhat more than half the diameter of the eye. First finger not extending beyond second; toes half webbed, with simple subarticular tubercles; two rather small metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the eye and the tip of the snout. Skin tubercular; parotoids large, triangular; a lateral series of large tubercles. Light brown above, with a light vertebral band; on each side of the latter are large blackish-brown angular spots; a dark band extending from the orbit to the middle of the side; beneath immaculate. Male with a subgular vocal sac.

Tehuantepec.

a. ♂.	Tehuantepec.	Brussels Museum [E.].

Y 2

b. ♀ " Fischer.
c–d. ♂ " Sumichrast.

71. Bufo argillaceus.

Bufo argillaceus, *Cope, Proc. Ac. Philad.* 1868, p. 138.

Differs from *B. granulosus* in lacking the preorbital ridge and having a longer muzzle. A tarsal dermal fold. Parotoids elongate trigonal, the long angle prolonged towards the sides.

Western Mexico.

72. Bufo granulosus.

Bufo granulosus, *Günth. Cat.* p. 67, pl. v. f. A.
Bufo granulosus, *Spix, Spec. Nov. Test. Ran.* p. 51, pl. 21. f. 2; *Peters, Mon. Berl. Ac.* 1872, p. 225.
—— globulosus, *Spix, l. c.* p. 49, pl. 19. f. 1.
Chaunus marmoratus, *Wagl. Isis*, 1828, p. 744.
—— globulosus, *Wagl. Syst. Amph.* p. 205.
Bufo nasutulus, *Wiegm. Isis*, 1833, p. 653; *Peters, Mon. Berl. Ac.* 1863, p. 80; *Steindachn. Novara, Amph.* p. 45.
—— strumosus, part., *Dum. & Bibr.* p. 716.
Phrynoidis granulosus, *Cope, Proc. Ac. Philad.* 1863, p. 357.

Derm of head more or less completely involved in cranial ossification; a slight bony ridge round the eye; snout acuminate, prominent; interorbital space slightly broader than the upper eyelid; tympanum distinct, about two thirds the width of the eye. First finger not extending beyond second; toes half webbed, with double subarticular tubercles; two moderate metatarsal tubercles; no tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder or the tympanum. Upper surfaces covered with small, frequently spiny tubercles; parotoids moderate, subtriangular, frequently rather indistinct. Brownish above, marbled with darker; lower surfaces immaculate. Male with a subgular vocal sac.

E. S. America.

a–b, *c*. ♂ ♀.	Pernambuco.	J. P. G. Smith, Esq. [P.].
d. ♀.	Pernambuco.	W. A. Forbes, Esq. [P.].
e. ♀.	Dutch Guiana.	Sir A. Smith [P.].
f. ♂.	S. America.	H. W. Bates, Esq. [C.].
g–i. Yg.	——?	

73. Bufo gutturosus.

Bufo gutturosus, *Günth. Cat.* p. 67, pl. v. f. B.
Bufo gutturosus, *Latr. Rept.* ii. p. 135; *Daud. Rain.* p. 82, pl. 34. f. 2 (B. strumosus), *and Rept.* viii. p. 166.
Bombinator strumosus, *Merr. Tent.* p. 179.
Bufo strumosus, *Gravenh. Delic.* t. 9. f. 3.
—— strumosus, part., *Dum. & Bibr.* p. 716.
Phrynoidis gutturosus, *Cope, Proc. Ac. Philad.* 1863, p. 357.
Peltaphryne lemur, *Cope, Proc. Ac. Philad.* 1868, p. 311.

Derm of head involved in cranial ossification; crown with prominent ridges, viz. a canthal, a preorbital, a supraorbital, a post-

Bufo punctatus, Bd & Gir.

a ♀ La Paz, California. Smithsonian Inst.
(As typical of *Bufo beldingii*, Yarrow).

b. ♀ Duval Co., Texas. Taylor.

c-d. ♂♀ Catorce, S. Luis Potosi.

e-f. ♂♂. Hacienda el Floreneio, Zacatecas. Bullen.

g-l. ♀ & yg. Duval Co. Taylor.

m-p. Agr. & yg. Colon Resistencia. Spegazzini.

q-t. Ags. Asuncion, Paraguay. Bohls.

orbital, and an orbito-tympanic; snout acuminate, prominent; loreal region very concave; interorbital space much broader than the upper eyelid; tympanum distinct, about two thirds the width of the eye. First finger not extending beyond second; toes half or two-thirds webbed, with double subarticular tubercles; two moderate metatarsal tubercles; a short tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches between the shoulder and the tympanum. Upper surfaces covered with small tubercles; parotoids moderate, transverse, rather indistinct. Brownish above, marbled with darker; sometimes a light vertebral stripe; beneath immaculate. Male with a subgular vocal sac.

W. Indies.

a–c, d, e. ♂, ♀, & yg.	S. Domingo.	
f. ♀.	S. Domingo.	Sir A. Smith [P.].
g–h. ♂ ♀.	Hayti.	J. Hearne, Esq. [P.].

74. Bufo peltocephalus.

Bufo peltocephalus, *Günth. Cat.* p. 67.
Bufo peltocephalus, (*Bibr.*) *Tschudi, Batr.* p. 89; *Bibr. in Ramon de la Sagra, Hist. Cuba, Rept.* pl. 30; *Dum. & Bibr.* p. 712.
Peltophryne peltocephala, *Fitzing. Syst. Rept.* i. p. 32.

Upper view of head.

Derm of head involved in cranial ossification; crown with prominent ridges, viz. a canthal, a supraorbital, a postorbital, and an orbito-tympanic; canthal ridge not confluent with supraorbital, ending in a knob; supraorbital and postorbital ridges forming a right angle; snout short, blunt; interorbital space much broader than the upper eyelid; tympanum very distinct, two thirds or half the width of the eye. First finger not extending beyond second; toes half webbed; subarticular tubercles double under the last phalanges of fourth toe; two moderate metatarsal tubercles; a short

tarsal fold. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tympanum. Upper surfaces covered with rather small warts; parotoids very prominent, elliptical or crescent-shaped, transverse. Uniform brown above; beneath immaculate. Male with a subgular vocal sac.

W. Indies.

a–c. Hgr. & yg.	Cuba.	W. Macleay, Esq. [P.].
d, e. ♂ ♀.	Cuba.	

75. Bufo empusus.

Peltaphryne empusa, *Cope, Proc. Ac. Philad.* 1862, p. 344.
Otaspis empusa, *Cope, Proc. Ac. Philad.* 1868, p. 312.

Differs from *B. peltocephalus* in the existence of an additional superficial arch of the skull, which passes from the mastoid region behind the auricular meatus, thus enclosing the latter, and causing it to be a mere foramen perforating a shield of bone. Tympanum small, only one fourth or one third the length of the palpebral border in diameter; parotoid small, rounded, lateral.

Cuba.

76. Bufo fastidiosus.

Cranopsis fastidiosus, *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, p. 96, pl. 23. f. 1.

Cranial integument entirely occupied by a rugose ossification; cranial ridges consisting of elevated canthus rostralis, supra- and postorbital border, and a supratympanic crest extending to the parotoid gland; these, especially the last, are obtusely thickened; supratympanic crest produced downwards behind the orbit as a rugose osseous plate to opposite the inferior border of the eye, bounding the position usually occupied by the membranum tympani by a rough concave margin; no tympanum. Fingers short; toes half webbed; metatarsal tubercles indistinct; no tarsal fold. The hind limb being carried forwards along the body, the end of the longest toe reaches the end of the snout. Parotoids short, subtriangular, as deep as long; upper surfaces of body and limbs studded with round warts, so closely on the latter region as to resemble a pustular disease. Yellowish brown above; a blackish band extends from the parotoid to the axilla; top of head yellow or brownish yellow; throat with a black spot.

Costa Rica.

77. Bufo epioticus.

Crepidius epioticus, *Cope, Journ. Ac. Philad.* (n. s.) viii. part 2, p. 97, pl. 23. f. 2.

Cranial crests consisting of orbito-tympanic, supraorbital, and canthal ridges, the last two continuous with each other and ex-

tending in a nearly straight line to the nares, with a slight thickening opposite the front of the orbit; a low, narrow postorbital ridge; no trace of tympanum. Digits of hands and feet enclosed in the skin, leaving the longest median digit projecting; inner digits of hands and feet rudimentary; no metatarsal tubercles; no tarsal fold. Hind limbs short. Skin with minute tubercles; parotoids very small, subrotund. General colour black, above a little lighter, with a few darker spots on each side; sometimes a brown median dorsal band.

Costa Rica.

5. NECTES.

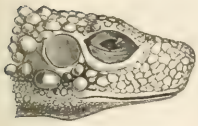
Pseudobufo, *Tschudi, Batr.* p. 87.
Nectes, *Cope, Nat. Hist. Rev.* 1865, p. 103.

Pupil horizontal. Tongue elliptical, entire and free behind. Palate smooth. Nostrils directed upwards. Tympanum distinct. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. No omosternum; sternum a cartilaginous plate, ossified along the centre. Diapophyses of sacral vertebra rather strongly dilated. Terminal phalanges simple.

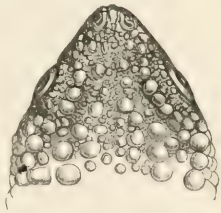
Java.

1. Nectes subasper.

Pseudobufo subasper, *Tschudi, l. c.*
Nectes subasper, *Cope, l. c.*



Lateral view of head.



Upper view of head.

Head rather small; snout prominent, obliquely truncate; loreal regions nearly vertical: nostrils small, tear-shaped, close together near the end of the snout, directed upwards; upper eyelid rather narrow; interorbital space broad: tympanum perfectly distinct, three fourths the diameter of the eye. Fingers slender, pointed, first shorter than second; toes rather long, pointed, united to the tips by a very broad membrane; no subarticular tubercles; two very indistinct, flat metatarsal tubercles; a rather indistinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches

the tip of the snout. Upper surfaces covered with closely set, smooth round warts of different sizes, the largest being distinctly porous; sides and lower surfaces granulate. Dark brown above, the largest warts light-coloured; light brown beneath, immaculate. Male with a subgular vocal sac.

Java.

a. ♂.	Java.	Dr. Bleeker.

6. NOTADEN.

Notaden, *Günth. Ann. & Mag. N. H.* (4) xi. 1873, p. 349.

Pupil horizontal. Tongue circular, entire, free behind. Vomerine teeth. A dermal ridge between the choanæ, and another in front of this. Tympanum hidden. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. Omosternum and sternum cartilaginous, rudimentary. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Australia.

1. Notaden bennetti. (Plate XXII. fig. 3.)

Notaden bennetti, *Günth. l. c.* p. 350.

Habit extremely stout. Two small bony prominences close together behind the level of the choanæ. Head very short and high; cleft of mouth not extending beyond the vertical of the centre of the eye; latter moderately large, scarcely prominent; interorbital space as broad as the upper eyelid. Limbs short, clumsy; fingers and toes short, depressed, latter webbed at the base; first and second fingers equal; subarticular tubercles of fingers slightly distinct, of toes quite indistinct; a large shovel-shaped inner metatarsal tubercle; no other tubercle. Skin of the back strongly glandular, very thick; upper surfaces with flat warts. Light olive above, with a large cross-shaped blackish marking on the back; sides and limbs blackish, white-spotted; beneath whitish, throat with scattered black spots.

E. Australia.

a. ♀.	Castlereagh River.	Sydney Museum. (Type.)
b. ♀.	Castlereagh River.	Dr. Bennett [P.].
c. Yg.	Wilson's River, Queensland.	

7. MYOBATRACHUS.

Myobatrachus, *Schleg. Proc. Zool. Soc.* 1850, p. 9; *Günth. Cat.* pp. 3 & 128.

Chelydobatrachus, (*Gray*) *Günth. Cat.* p. 273.

b-c. ♂♀. S. E. Bowes. Tischer.

Cophophryne sikkimensis, Blyth.

a-c. ♂♀ yg. Sikkim, 13,000 ft. Blanford.

d. yg. Dandaloo, N. S. W. Fletcher.

Pupil erect. Tongue small, elliptical, entire and free behind. Palate smooth. Tympanum distinct. Fingers and toes free, the tips not dilated. Outer metatarsals united. Epicoracoid cartilages narrow, scarcely overlapping; no omosternum; sternum cartilaginous, ossified on the median line. Diapophyses of sacral vertebra rather strongly dilated. Terminal phalanges simple.

Australia.

1. Myobatrachus gouldii.

Myobatrachus paradoxus, *Günth. Cat.* pp. 3 & 128.
Chelydobatrachus gouldii, *Günth. l. c.* p. 53.
Breviceps gouldii, *Gray, in Grey's W. Austr.* ii. p. 448, pl. i. f. 1.
Myobatrachus paradoxus, *Schleg. Proc. Zool. Soc.* 1850, p. 9, *and Handl. Dierk.* ii. pl. 4. f. 76; *Peters, Mon. Berl. Ac.* 1867, p. 37.
Myobatrachus gouldii, *Gray, Proc. Zool. Soc.* 1850, p. 10.

Habit extremely stout. Head very small, with short rounded snout; canthus rostralis absent; crown swollen; eye very small; tympanum more or less distinct, rather larger than the eye. Limbs excessively short; fore limb very strong, adapted for burrowing; fingers short, much depressed; hind limb weaker; toes not longer than the fingers, also much depressed; subarticular tubercles indistinct; two rather indistinct flat metatarsal tubercles, outer largest. Skin smooth, or with small scattered tubercles. Above greyish brown, beneath lighter. Male with a subgular vocal sac.

W. Australia.

a. ♀.	W. Australia.	Mr. Gilbert. (Type.)
b. ♀.	Houtmans Abrolhos.	
c, *d*–*e*. ♂ ♀.	Swan River.	Sir A. Smith [P.].

8. RHINOPHRYNUS.

Rhinophrynus, *Dum. & Bibr.* viii. p. 127; *Günth. Cat.* p. 127; *Cope, Nat. Hist. Rev.* 1865, p. 100.

Pupil erect. Tongue elongate, subtriangular, free in front. Palate smooth. No tympanum. Fingers free; toes webbed, the tips not dilated. Outer metatarsals united. Epicoracoid cartilages narrow, scarcely overlapping; no omosternum; sternum rudimentary. Diapophyses of sacral vertebra rather strongly dilated. Terminal phalanges simple.

Mexico.

1. Rhinophrynus dorsalis.

Rhinophrynus dorsalis, *Günth. Cat.* p. 127, pl. xii.
Rhinophrynus dorsalis, *Dum. & Bibr.* p. 758, pl. 91. f. 2; *Günth. Proc. Zool. Soc.* 1858, p. 339.
—— rostratus, *Brocchi, Bull. Soc. Philom.* (7) i. p. 196, *and Miss. Sc. Mex., Batr.* pl. 9. f. 1.

Habit extremely stout. Head small; mouth very narrow; snout long, truncated, forming a flat circular disk in front; nostrils vertical, nearly on a line with the front edge of the eyes; eyes very small. Limbs very short; fingers and toes depressed, latter nearly entirely webbed; subarticular tubercles indistinct; inner toe tubercle-like; a very large oval, shovel-like metatarsal tubercle. Skin smooth above, granular on the sides and beneath and on the snout. Olive-brown or bluish grey above, with or without yellowish spots on the sides and on the middle of the back; the latter sometimes confluent into a vertebral line. (Male with two lateral vocal cavities, internal, and hidden behind the angle of the mouth. —*Gthr.*)

Mexico.

a. ♂.	Mexico.	M. Sallé [C.].
b–c. ♀ & yg.	Mexico.	
d–e. Yg.	Vera Cruz.	M. Sallé [C.].
f–g. Yg.	S. America.	M. Sallé [C.].

8. HYLIDÆ.

Hylidæ, Pelodryadidæ, and Phyllomedusidæ, *Günth. Cat. Batr. Sal.*
Hylidæ, *Cope, Nat. Hist. Rev.* 1865, *and Journ. Ac. Philad.* (2) vi. 1866.
Hylidæ and Phyllomedusidæ, *Mivart, Proc. Zool. Soc.* 1869.

Upper jaw toothed; diapophyses of sacral vertebra dilated; terminal phalanges claw-shaped, swollen at the base.

The sternal apparatus is much the same in all the members of this family; the omosternum and the sternum are always present and cartilaginous.

The vertebræ are procœlian and destitute of ribs. The coccyx is attached to two condyles.

Most of the species have a fronto-parietal fontanelle; this is absent in the adult state in several species of *Hyla* and in *Nototrema*; in a few species of the former genus, in *Nyctimantis*, and in *Triprion* the skin of the head is replaced by the rugose cranial ossification.

Thoropa, *Chorophilus*, and *Acris*, in which the diapophyses of the sacral vertebra are slightly dilated, connect the *Hylidæ* with the *Cystignathidæ*.

Synopsis of the Genera.

Pupil horizontal; toes free, the tips very slightly dilated.
1. **Thoropa**, p. 331.

Pupil horizontal; toes nearly free, the tips very slightly dilated; diapophyses of sacral vertebra very slightly dilated.
2. **Chorophilus**, p. 332.

Pupil horizontal: toes webbed, the tips very slightly dilated; diapophyses of sacral vertebra very slightly dilated.
3. **Acris**, p. 336.

Pupil horizontal; toes more or less webbed; tongue adherent or moderately free behind; vomerine teeth.
4. **Hyla**, p. 337.

Characters of *Hyla*, but with a dorsal pouch in the female.
5. **Nototrema**, p. 416.

Pupil horizontal; toes webbed; tongue moderately free behind; vomerine teeth none ..... 6. **Hylella**, p. 419.

Pupil vertical; tongue scarcely free behind.
7. **Nyctimantis**, p. 421.

Pupil vertical; tongue extensively free behind; inner toe not opposable..... 8. **Agalychnis**, 422.

Pupil vertical: tongue extensively free behind; inner finger and toe opposable ..... 9. **Phyllomedusa**, p. 424.

Pupil vertical; parasphenoid toothed; labial margin much prolonged ..... 10. **Triprion**, p. 431.

1. THOROPA.

Thoropa, *Cope*, *Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Ololygon, (*Fitzing.*) *Steindachn. Novara, Amph.* p. 64.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth. Tympanum distinct. Fingers and toes free, the tips simply swollen, not dilated into regular disks. Outer metatarsals united.

Brazil.

This genus, perhaps, should be united with the following.

1. Thoropa miliaris.

Rana miliaris, *Spix, Spec. Nov. Test. Ran.* p. 20, pl. 6. f. 1.
? Cystignathus missiessii, *Eyd. & Soul. Voy. Bonite, Zool.* p. 148, pl. 10. f. 2.
? Thoropa missiessii, *Cope*, *Nat. Hist. Rev.* 1865, p. 110.
Ololygon abbreviatus, (*Fitz.*) *Steindachn. Novara, Amph.* p. 65, pl. 4. f. 16–18.
Hylodes abbreviatus, *Hensel, Arch. f. Naturg.* 1867, p. 151.
Ololygon miliaris, *Peters, Mon. Berl. Ac.* 1872, p. 206.

Vomerine teeth in two small groups a little behind the level of the choanæ. Head broad, flat; snout truncate; loreal region concave; interorbital space broad; tympanum about two thirds the diameter of the eye. First and second fingers equal; toes very long, indistinctly fringed; two moderately developed metatarsal tubercles. Limbs moderately elongate. Upper surfaces smooth or

with a few very small warts; lower surfaces smooth, except the lower belly and the thighs, which are granulate. Flesh-coloured above, brown-marbled; limbs cross-barred. Male without vocal sac; during the breeding-season the inner side of the first two fingers furnished with blackish rugosities.

Brazil.

2. CHOROPHILUS*.

Chorophilus, *Baird, Proc. Ac. Philad.* vii. 1854, p. 60; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Helocœtes, *Baird, l. c.*
Pseudacris, *Fitzing. Syst. Rept.* p. 31 (name only); *Günth. Cat.* p. 97; *Cope, Nat. Hist. Rev.* 1865, p. 110.
Acris, sp., *Dum. & Bibr.* viii. p. 509.
Cystignathus, sp., *Holbr. N.-Amer. Herp.* iv. p. 107; *Günth. Cat.* p. 29.

Pupil horizontal. Tongue oval or subcircular, entire or slightly nicked, and free behind. Vomerine teeth. Tympanum distinct. Fingers free; toes nearly free, the tips dilated into very small disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra very slightly dilated.

North America; Peru.

Synopsis of the Species.

I. Skin smooth above, or nearly so.

Vomerine teeth behind the level of the choanæ; tibio-tarsal articulation reaching the eye; back with longitudinal dark bands ..... 1. *nigritus*, p. 333.
Tongue subcircular; back with oblong, dark, light-margined spots; limbs regularly cross-barred ..... 2. *ornatus*, p. 333.
Head long, narrow; back immaculate .. 3. *ocularis*, p. 333.
Vomerine teeth behind the level of the choanæ; tibio-tarsal articulation not reaching the eye; back immaculate .. 4. *copii*, p. 334.
Vomerine teeth on a level with the hinder edge of the choanæ; tibio-tarsal articulation reaching the eye; back immaculate ..... 5. *cuzcanus*, p. 334.
Vomerine teeth between the choanæ; tibio-tarsal articulation reaching the eye; back with longitudinal dark bands or series of spots ..... 6. *triseriatus*, p. 335.

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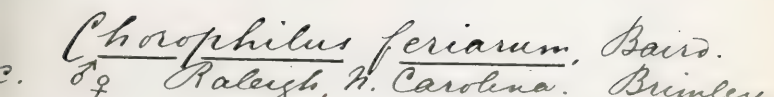
* 1. *Helocœtes feriarum*, Baird, Proc. Ac. Philad. vii. p. 60.—Carlisle, Penna.


Chorophilus feriarum, Baird.
♂ Raleigh, N. Carolina. Brimley.

b. ♀ Duval Co., Texas. Taylor.

a. ♂ San Diego, Texas. Indian Mus.

II. Dorsal region strongly tuberculate.

Tibio-tarsal articulation reaching beyond the eye; tympanum much smaller than the eye ..... 7. *verrucosus*, p. 335.

Tibio-tarsal articulation not reaching the eye; tympanum nearly as large as the eye ..... 8. *septentrionalis*, p. 335.

1. Chorophilus nigritus.

Pseudacris nigrita, part., *Günth. Cat.* p. 97.
Rana nigrita, *Leconte, Ann. Lyc. N. Y.* i. p. 282; *Harlan, Med. Phys. Res.* p. 105, *and Journ. Ac. Philad.* v. p. 341.
Acris nigrita, *Dum. & Bibr.* p. 509.
Cystignathus nigritus, *Holb. N.-Amer. Herp.* iv. p. 107, pl. 26.
Chorophilus nigritus, *Baird, Proc. Ac. Philad.* vii. p. 60; *Leconte, eod. loc.* p. 427.

Tongue oval, slightly nicked. Vomerine teeth in two slightly oblique groups behind the level of the choanæ. Head much longer than broad; snout acuminate, rather prominent, nearly twice as long as the diameter of the eye; canthus rostralis rather indistinct; interorbital space a little broader than the upper eyelid; tympanum half the diameter of the eye. Fingers and toes slender, latter with a slight rudiment of web; first finger shorter than second; subarticular tubercles small; no outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granulate beneath. Blackish ash above, with three interrupted black longitudinal bands; loreal and temporal regions black; upper lip white-margined, beneath whitish, immaculate.

South Carolina and Georgia.

a. ♀. Georgia.

2. Chorophilus ornatus.

Cystignathus ornatus, *Holb. N.-Amer. Herp.* iv. p. 103, pl. 25.
Chorophilus ornatus, *Leconte, Proc. Ac. Philad.* vii. 1854, p. 428.

Tongue more rounded than in *C. nigritus*; hind limb shorter. Dove-colour above, with oblong spots of dark brown, margined with yellow; limbs transversely barred.

South Carolina and Georgia.

3. Chorophilus ocularis.

Hylodes ocularis, *Holb. N.-Amer. Herp.* iv. p. 137, pl. 35.
Hyla ocularis, *Leconte, Proc. Ac. Philad.* vii. 1854, p. 429.
Chorophilus angulatus, *Cope, Check-list N. Amer. Rept.* p. 30.

Vomerine teeth in two groups between the choanæ. Head long,

narrow; snout pointed. Chestnut-brown or bronzed above; upper jaw white, which colour is continued to the anterior extremity; above this a black band runs over the shoulder and terminates on the flanks; abdomen yellowish white. Extremely small.

South Carolina.

4. Chorophilus copii.

Cystignathus ornatus, *Günth. Cat.* p. 29.
Chorophilus ocularis, *Cope, Check-list N.-Amer. Rept.* p. 30.

Tongue circular, entire. Vomerine teeth in two slightly oblique oval groups behind the level of the choanæ. Head slightly longer than broad; snout rounded, as long as the diameter of the orbit; canthus rostralis rather indistinct; interorbital space as broad as the upper eyelid; tympanum somewhat more than half the diameter of the eye. Fingers and toes moderate, the tips very indistinctly dilated; first finger shorter than second; toes with a slight rudiment of web; subarticular tubercles small; no outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum. Skin smooth above, granulate on the belly. Olive above; sides with three black spots, viz. a streak from the eye to the shoulder, an oval spot in the middle of the side, and one or two smaller ones on the loin.

Georgia.

a. ♀. Georgia.

Mr. Cope considers this Frog specifically distinct from *C. ornatus*, and identifies it with *Hyla ocularis* of Daudin. The latter opinion I cannot share, as nothing in the French author's description and figure indicates the least analogy with this form. The toes are represented as half webbed in *H. ocularis*, and the digital expansions of *C. copii* are so slight that they would certainly have escaped Daudin's observation. Moreover the colour is quite different.

5. Chorophilus cuzcanus.

Chorophilus cuzcanus, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 37.

Form rather robust. Tongue discoid, openly notched behind. Vomerine teeth in two fascicles between the choanæ, their posterior borders projecting a little behind the posterior margins of the latter. Head wide, flat; snout obtusely rounded, a little longer than the diameter of the eye; canthus rostralis well marked but contracted; tympanum half the diameter of the eye. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the orbit. Skin smooth above, granulate beneath. Upper surfaces dark olive, limbs paler; sides of the head to the tympanum dark, bordered above by a blackish line along the canthus rostralis, and below by a light labial border; beneath whitish.

Peru.

a-b. ♂♀ Lucknow, Ontario. Indian Mus.
c. Many spees. Regina, Assiniboia. Eigenmann.

6. Chorophilus triseriatus.

Hyla triseriata, *Wied, Reise N. Amer.* i. p. 249, *and Nova Acta Leop. Carol.* xxxii. p. 118.
Helocœtes triseriatus, *Baird, Proc. Ac. Philad.* vii. 1854, p. 60.
—— clarkii, *Baird, l. c., and U.S. Mex. Bound. Surv., Rept.* p. 28, pl. 37. f. 4–9.
Chorophilus triseriatus, *Cope, Check-list N.-Amer. Rept.* p. 30.

Vomerine teeth between the choanæ. Head longer than broad. Limbs as in *C. nigritus*. Three or five longitudinal dark bands or series of spots.

United States—Central, Eastern, and Southern regions.

7. Chorophilus verrucosus.

Chorophilus verrucosus, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 87.

Tongue large and wide behind, faintly emarginate. Vomerine teeth in two groups near the line of the posterior border of the choanæ. Head narrow and acuminate; snout projecting acutely beyond the labial margin; canthus rostralis distinct, but obtusely rounded; tympanum one fourth the diameter of the orbit. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the nostril. Skin of dorsal region tubercular, smooth warts of large and small size being irregularly crowded over its entire surface; belly granulate. Colour above leaden, with three longitudinal rows of darker, light-edged spots, extending one on each side and one on the median line; they are each composed of a series of spots joined end to end; femur and tibia cross-barred; upper lip dark plumbeous, with a series of five white spots; a similar spot below the tympanum; inferior surfaces yellowish.

Florida.

8. Chorophilus septentrionalis. (Plate XXIII. fig. 1.)

Pseudacris nigrita, part., *Günth. Cat.* p. 97.

Tongue oval, slightly nicked. Vomerine teeth in two small groups behind the level of the choanæ. Head longer than broad; snout subacuminate, prominent, twice as long as the diameter of the eye; latter very small; canthus rostralis rather indistinct; interorbital space a little broader than the upper eyelid; tympanum nearly as large as the eye. Fingers and toes moderately slender, latter with a slight rudiment of web; first finger shorter than second; an indistinct outer metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the tympanum. Skin granulate above and beneath. Yellowish olive above, with five longitudinal dark bands—the median bifurcating on the sacral region, the outermost extending

from the tip of the snout through the eye to the middle of the side; beneath whitish, immaculate. From snout to vent 25 millim.

Great Bear Lake.

a. ♀. Great Bear Lake.

Well distinguished from *C. triseriatus* by its shorter hind limbs.

3. ACRIS.

Acris, *Dum. & Bibr.* viii. p. 506; *Günth. Cat.* p. 71; *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86.

Pupil horizontal. Tongue heart-shaped, free behind. Vomerine teeth. Tympanum indistinct. Fingers free, toes extensively webbed, the tips dilated into very small disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra very slightly dilated.

North America.

1. Acris gryllus.

Acris gryllus, *Günth. Cat.* p. 71.
Rana gryllus, *Leconte, Ann. Lyc. N. Y.* i. p. 282; *Harlan, Med. Phys. Res.* p. 104.
—— dorsalis, *Harlan, l. c.* p. 105.
Acris gryllus, *Dum. & Bibr.* p. 507; *Leconte, Proc. Ac. Philad.* 1855, p. 28.
Hylodes gryllus, *Holbr. l. c.* pl. 33.
Acris acheta, *Baird, Proc. Ac. Philad.* 1855, p. 59.

Habit slender. Vomerine teeth in two oblique groups between the choanæ. Head elongate; snout acuminate, nearly twice as long as the diameter of the eye; interorbital space as broad as the upper eyelid. First finger a little shorter than second; toes two-thirds webbed; subarticular tubercles rather small; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or a little beyond. Skin smooth or slightly tuberculous, belly granulate. Coloration very variable; generally a large triangular dark-brown spot between the eyes; sometimes a light dorsal band. Male with a subgular vocal sac.

United States: the typical form confined to the Austro-riparian region, the var. *crepitans* to the Eastern and Central regions.

a. Hgr.	South Carolina.	Dr. Harlan [P.]. (As typical of *Rana dorsalis*.)
b–c. ♀ & hgr.	South Carolina.	
d. Many spec.: ♂, ♀, & hgr.	N. America.	Edward Doubleday, Esq. [P.].

Var. **crepitans**.

Hylodes gryllus, *Dekay, New York Faun., Rept.* p. 70, pl. 22.
Acris crepitans, *Baird, Proc. Ac. Philad.* 1855, p. 59; *Leconte, eod.*

- c. Agr. N. America.

Many spees. Pensacola, Fla. Bollman
& Duval Co., Texas. Taylor.

á. Many specs. Bloomington, Ind. Bollman

loc. p. 426; *Baird, U.S. Mex. Bound. Surv., Rept.* p. 28, pl. 37. f. 14–17.

Differs by a stouter habit, the head being shorter, and the tibio-tarsal articulation reaching hardly the tip of the snout. According to Mr. Cope (Check-list N.-Amer. Rept.) this form should not be specifically separated from the preceding, but both are considered subspecies.

e–h. ♂, ♀, & hgr. Philadelphia.

VAR. **bufonia.**

Resembles the preceding, but the head and back are covered with very large warts. Markings indistinct. Perhaps a species.

i. ♀. New Orleans.

4. HYLA*.

Hyla, sp., *Laur. Syst. Amph.* p. 32.
Calamita, sp., *Merr. Tent. Syst. Amph.* p. 169.
Calamites, *Fitzing. N. Class. Rept.* p. 38; *Wagl. Syst. Amph.* p. 200; *Tschudi, Class. Batr.* p. 72; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.
Hypsiboas, sp., *Wagl. l. c.* p. 200.
Auletris, *Wagl. l. c.* p. 201.
Hyas, *Wagl. l. c.* p. 201.
Scynax, *Wagl. l. c.* p. 201.
Sphænorhynchus, *Tschudi, l. c.* p. 71.
Hypsiboas, *Tschudi, l. c.*; *Cope, l. c.*
Lophopus, *Tschudi, l. c.* p. 73.
Trachycephalus, (*Bibr.*) *Tschudi, l. c.*; *Dum. & Bibr.* viii. p. 534; *Günth. Cat.* p. 117; *Cope, Nat. Hist. Rev.* 1865, p. 109, *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Dendrohyas, *Tschudi, l. c.* p. 74.
Ranoidea, *Tschudi, l. c.* p. 76; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Litoria, *Tschudi, l. c.* p. 77; *Dum. & Bibr.* p. 503; *Günth. Cat.* p. 96; *Cope, Nat. Hist. Rev.* 1865, p. 110.
Hyla, *Dum. & Bibr.* p. 542; *Günth. Cat.* p. 98; *Cope, Nat. Hist. Rev.*

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* 1. *Hyla delitescens*, Leconte, Ann. Lyc. N. Y. i. p. 281; Holbr. N.-Amer. Herp. iv. p. 129, pl. 32.—Georgia.
2. *Litoria americana*, Dum. & Bibr. p. 506.—New Orleans.
3. *Litoria marmorata*, A. Dum. Ann. Sc. Nat. 1853, p. 142; *Hyla thyposticta*, Cope, Proc. Amer. Philos. Soc. xi. 1869, p. 163.—Australia.
4. *Hyla gratiosa*, Leconte, Proc. Ac. Philad. vii. 1856, p. 146, pl. 4.—Georgia.
5. *Hyla castanea*, Steindachn. Novara. Amph. p. 62, pl. 3. f. 9–13.
6. *Litoria guttata*, Macleay, Proc. Linn. Soc. N. S. Wales, ii. p. 137.—Katow.
7. *Litoria dorsalis*, Macleay, loc. cit. p. 138.—Katow.
8. *Hyla pendulata*, Brocchi, Bull. Soc. Philom. (7) iii. p. 21.—Guatemala.

1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1863, p. 86, & 1867, p. 200.
Centrotelma, *Burmeister, Erläuter. Faun. Bras.* p. 97; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.
Hylomedusa, *Burmeister, l. c.* p. 102.
Pelodryas, *Günth. Cat.* p. 119; *Cope, Nat. Hist. Rev.* 1865, p. 109.
Scytopis, *Cope, Proc. Ac. Philad.* 1862, p. 354; *Nat. Hist. Rev.* p. 109; *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Osteocephalus, (*Fitzing.*) *Steindachn. Arch. per la Zool.* ii. fasc. i. p. 77; *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Acrodytes, *Cope, Nat. Hist. Rev.* 1865, p. 109.
Smilisca, *Cope, Proc. Ac. Philad.* 1865, p. 194.
Dryomelictes, *Cope, l. c.*
Cinclidium, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.
Chirodryas, *Keferst. Götting. Nachr.* 1867, p. 358.
Cophomantis, *Peters, Mon. Berl. Ac.* 1870, p. 651.
Cincloscopus, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 554.
Plectrohyla, *Brocchi, Bull. Soc. Philom.* (7) i. p. 92.
Cauphias, *Brocchi, l. c.* p. 129.

Pupil horizontal. Tongue entire or slightly nicked, adherent or more or less free behind. Vomerine teeth. Tympanum distinct or hidden. Fingers free or more or less webbed; toes webbed, the tips dilated into larger or smaller disks. Outer metatarsals united or slightly separated. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra more or less dilated.

Cosmopolitan, except the Ethiopian Region; one species only in the Palæarctic and two in the Indian.

Synopsis of the Species.

I. American Species.

A. Derm of head not involved in cranial ossification.

1. Choanæ large; vomerine teeth in two strong series, forming together a /‾\, a ∩, or a ⌒.

a. Fingers half webbed, or more.

a. A projecting rudiment of pollex *.

Outer fingers entirely webbed; skin granulate above; heel with a triangular dermal appendage ..... 1. *maxima*, p. 349.
Outer fingers half webbed; upper surfaces perfectly smooth ..... 5. *faber*, p. 351.

* This rudiment, in form of a tubercle or an acute claw on the inner side of the first digit, is produced by one or two phalanges which are perpendicular to the metacarpal of the pollex; in the majority of the species these phalanges are absent, or have the same direction as the metatarsals, and are therefore not distinguishable externally.

Outer fingers half webbed; upper surfaces with scattered tubercles; tympanum nearly two thirds the diameter of the eye 11. *pardalis*, p. 354.
Outer fingers two-thirds webbed; skin smooth above; heel with a very short triangular dermal appendage ..... 16. *albomarginata*, [p. 356.
Outer fingers half webbed; upper surfaces granulate; tympanum half the diameter of the eye, or rather less ..... 19. *granosa*, p. 358.

β. No projecting rudiment of pollex.

Outer fingers half or two-thirds webbed; tympanum two thirds the diameter of the eye; the latter less than the length of the snout; heel with a triangular dermal appendage ..... 2. *appendiculata*, [p. 349.
Outer fingers half webbed; tympanum two thirds the diameter of the eye, which equals the length of the snout; heel with a triangular dermal appendage ..... 3. *cryptomelas*, p. 350.
Outer fingers nearly entirely webbed; disks immensely large, the largest being twice the size of the tympanum ..... 4. *vasta*, p. 351.
Outer fingers nearly two-thirds webbed; tympanum two thirds the diameter of the eye; upper surfaces with irregular tubercles; belly dark-spotted ..... 12. *inframaculata*, [p. 354.
Outer fingers entirely webbed; tympanum three fourths the diameter of the eye; heel with a triangular dermal appendage 13. *corticalis*, p. 355.
Outer fingers nearly entirely webbed; tympanum two thirds the diameter of the eye; upper surface covered with large and small warts ..... 14. *tuberculosa*, p. 355.
Outer fingers nearly half webbed; tympanum as large as the eye; borders of fronto-parietals forming two strong ridges .... 28. *taurina*, p. 363.
Outer fingers nearly entirely webbed; tympanum three fourths the diameter of the eye; borders of fronto-parietals forming two strong ridges ..... 29. *langsdorffii*, p. 364.

b. Fingers one-third webbed, or nearly so.

Tympanum two thirds the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout or beyond..... 6. *crepitans*, p. 352.
Tympanum two thirds the diameter of the eye; tibio-tarsal articulation not reaching the tip of the snout ..... 7. *indris*, p. 353.
Tympanum two thirds the diameter of the

eye; thumb an incurved unusually elongated osseous spur ..... 8. *circumdata*, p. 353.
Tympanum one third the diameter of the orbit; digital dilatations small ..... 10. *hypselops*, p. 353.
Upper eyelid very narrow ..... 18. *xerophylla*, p. 358.
Tympanum hidden; heel with a short dermal spur ..... 20. *punctillata*, p. 359.
Tympanum hidden; no tarsal spur ..... 21. *punctatissima*, [p. 359.
Tympanum two thirds the diameter of the eye; canthus rostralis nearly straight; loreal region not very oblique; no distinct rudiment of pollex ..... 26. *leprieurii*, p. 361.
Tympanum two thirds or three fourths the diameter of the eye; canthus rostralis curved; loreal region not very oblique; no distinct rudiment of pollex ..... 27. *buckleyi*, p. 362.

c. Fingers with a slight rudiment of web.

Tympanum two thirds the diameter of the eye; latter very small; snout acute, more than twice the diameter of the eye. 9. *rostrata*, p. 353.
Tympanum half the diameter of the eye; no distinct rudiment of pollex ..... 15. *alboguttata*, p. 356.
Tympanum half or two thirds the diameter of the eye; upper eyelid very narrow .. 17. *punctata*, p. 357.
Tympanum half the diameter of the eye; loreal region oblique; heel with a dermal spur ..... 22. *fasciata*, p. 359.
Tympanum about two thirds the diameter of the eye; canthus rostralis straight .. 23. *boans*, p. 360.
Tympanum three fourths the diameter of the eye; tibia measuring a little more than the distance from axilla to vent .. 24. *lanciformis*, p. 361.
Loreal region nearly vertical; heel with a dermal spur ..... 25. *spectrum*, p. 361.

d. Fingers quite free.

Tympanum three fourths the diameter of the eye; canthus rostralis straight .... 30. *planiceps*, p. 364.

2. Choanæ small; vomerine teeth forming a very open chevron, the point of which is turned forwards ..... 51. *vauteri*, p. 376.

3. Vomerine teeth in two groups or short series, transverse or obliquely directed backwards and inwards; choanæ small or moderate (with a few exceptions).

a. Fingers more than one-third webbed.

α. The web reaching the disks of the second and fourth fingers.

Vomerine teeth between the choanæ; tympanum very small, rather indistinct; the web not reaching the disk of third finger 69. *pulverata*, p. 386.

Vomerine teeth between the choanæ; tympanum very distinct, about half the diameter of the eye; the web not reaching the disk of third finger; forearm and tarsus with a denticulated fringe . . . . . 79. *senicula*, p. 391.

Vomerine teeth on a level with the hinder edge of the choanæ; tympanum very distinct, two thirds the diameter of the eye; the web reaching the disk of third finger; forearm and tarsus with a denticulated fringe . . . . . 80. *marmorata*, p. 391.

Vomerine teeth a little behind the level of the choanæ; tympanum very distinct, nearly two thirds the diameter of the eye; the web not reaching the disk of third finger; skin thick, leathery, minutely pitted . . . . . 35. *coriacea*, p. 367.

Vomerine teeth between the choanæ; tympanum distinct, half the diameter of the eye; the web not reaching the disk of third finger; tibio-tarsal articulation reaching the tip of the snout . . . . . 43. *salvini*, p. 372.

β. The web not reaching the disks of the second and fourth fingers.

* Vomerine teeth on a level with the hinder edge of the choanæ, or a little beyond the latter.

Tympanum very distinct, half the diameter of the eye; tibio-tarsal articulation marking the front of the eye; skin thick, minutely pitted . . . . . 34. *quadrangulum*, [p. 367.

Tympanum very small, indistinct; tibio-tarsal articulation marking the eye . . . . 68. *albopunctulata*, [p. 385.

Tympanum one third the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout . . . . . 71. *microps*, p. 386.

Tympanum about half the diameter of the eye; snout pointed, much projecting . . 73. *aurantiaca*, p. 388.

** Vomerine teeth in the middle between the choanæ.

Tympanum very distinct, less than half the diameter of the orbit; fingers half webbed, the disks about as large as the tympanum. 42. *gabbii*, p. 372.

Tympanum rather indistinct; canthus rostralis scarcely distinct; fingers half webbed ..... 70. *reticulata*, p. 386.

Tympanum more or less distinct, half the diameter of the eye; fingers nearly two-thirds webbed; tibio-tarsal articulation reaching between the eye and the tip of the snout ..... 72. *leucophyllata*, [p. 387.

Tympanum perfectly distinct, somewhat more than half the diameter of the eye; snout not longer than the diameter of the orbit; tibio-tarsal articulation reaching the tip of the snout, or a little beyond 74. *bipunctata*, p. 389.

As in the preceding, but the snout a little longer than the diameter of the orbit .. 75. *minuta*, p. 389.

Tympanum rather indistinct, half the diameter of the eye; tibio-tarsal articulation reaching the eye; middle of the back rough with bony deposits ..... 81. *dasynotus*, p. 392.

Tympanum one third the diameter of the eye; tibio-tarsal articulation reaching nearly the tip of the snout; fingers about two-thirds webbed..... 83. *sordida*, p. 393.

Tympanum nearly half the diameter of the eye; tibio-tarsal articulation reaching between the eye and the tip of the snout; fingers not quite half webbed ..... 84. *nigripes*, p. 394.

b. Outer fingers one-third or one-fourth webbed.

a. Vomerine teeth in the middle between the choanæ.

Tympanum two thirds or three fourths the diameter of the eye; tibio-tarsal articulation reaching between the eye and the tip of the snout; a distinct tarsal fold.. 41. *baudinii*, p. 371.

Back covered with minute pustulations .. 46. *cadaverina*, p. 373.

Tympanum somewhat more than half the diameter of the eye; tibio-tarsal articulation marking the front of the eye; no distinct tarsal fold ..... 54. *uranochroa*, p. 377.

Tympanum about two thirds the diameter of the eye; tibio-tarsal articulation reaching nearly the tip of the snout; canthus rostralis indistinct ..... 76. *rhodopepla*, p. 389.

Tympanum one third the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout; toes half webbed.. 77. *strigilata*, p. 390.

Tympanum extremely small, scarcely distinct; tibio-tarsal articulation reaching [p. 400.
the tip of the snout ..... 101. *miotympanum*,

β. Vomerine teeth on a level with the hinder edge of the choanæ.

Tympanum about two thirds the diameter of the eye; tibio-tarsal articulation not reaching beyond the eye; no tarsal fold. 31. *venulosa*, p. 364.

Tympanum one third or one half the diameter of the eye; tibio-tarsal articulation not reaching beyond the eye; no tarsal fold. 32. *nigropunctata*, [p. 366.

Tympanum two thirds the diameter of the eye; tibio-tarsal articulation reaching beyond the eye; a tarsal fold ..... 33. *mesophæa*, p. 366.

Tympanum about two thirds the diameter of the eye; tibio-tarsal articulation reaching the tympanum or the posterior border of the eye; a tarsal fold..... 44. *versicolor*, p. 372.

Tympanum two thirds the size of the eye; tibio-tarsal articulation reaching beyond the posterior border of the eye; a tarsal fold; body rough ..... 45. *arenicolor*, p. 373.

Tympanum half the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout ..... 49. *zebra*, p. 375.

Tympanum about two thirds the diameter of the eye; tibio-tarsal articulation reaching the eye or slightly beyond; a tarsal [p. 377.
fold; upper surfaces smooth ..... 53. *carolinensis*,

γ. Vomerine teeth behind the level of the choanæ.

Tympanum one third the diameter of the eye; snout elevated, vertically truncate. 82. *parviceps*, p. 393.

Tympanum one sixth the size of the eye; snout prominent, truncate; a distinct rudiment of pollex ..... 85. *palliata*, p. 394.

Tympanum one third the diameter of the eye; snout rounded, as long as the diameter of the orbit; a distinct rudiment of pollex ..... 86. *polytænia*, p. 394.

Tympanum less than one third the diameter of the eye; snout rounded, shorter than [p. 395.
the diameter of the orbit ..... 87. *rubicundula*,

c. Outer fingers slightly webbed at the base, sometimes rather indistinctly.

α. Vomerine teeth in the middle between the choanæ.

Tympanum half the diameter of the eye; tibio-tarsal articulation reaching the tip of the snout; toes two-thirds webbed; snout not prominent ..... 48. *fusca*, p. 374.

Tympanum half the diameter of the eye; toes two-thirds webbed; snout prominent. 52. *nasica*, p. 376.

Tympanum about one third the diameter of the eye; skin of upper surfaces minutely corrugated ..... 56. *andersonii*, p. 378.

Tympanum half the diameter of the eye; tibio-tarsal articulation reaching the tympanum or the posterior border of the eye; toes not more than half webbed ..... 57. *eximia*, p. 378.

Tympanum hidden; a claw-like rudiment of pollex ..... 89. *guatemalensis*, [p. 396.

Tympanum much smaller than the eye; toes half webbed; disks large ..... 93. *nebulosa*, p. 397.

Tympanum hardly distinct, two fifths the diameter of the eye; tibio-tarsal articulation reaching beyond the tip of the snout 94. *labialis*, p. 397.

Tympanum half the diameter of the eye; tibio-tarsal articulation reaching nearly the tip of the snout; toes half webbed; hinder side of thighs uniform ..... 96. *squirella*, p. 398.

Tympanum half the diameter of the eye; hinder side of thighs black, white-spotted. 97. *femoralis*, p. 398.

Tympanum half the diameter of the eye; tibio-tarsal articulation reaching between the eye and the tip of the snout; head much depressed; canthus rostralis very indistinct ..... 106. *depressiceps*, [p. 402.

Tympanum more than half the diameter of the eye; tibio-tarsal articulation reaching beyond the tip of the snout ..... 107. *phæota*, p. 402.

β. Vomerine teeth on a level with the hinder edge of the choanæ, or slightly beyond the latter.

Tympanum half the diameter of the eye; tibio-tarsal articulation reaching the eye; toes half webbed ..... 47. *regilla*, p. 374.

Tympanum about half the diameter of the eye; tibio-tarsal articulation reaching beyond the tip of the snout; toes two-thirds or three-fourths webbed ..... 50. *pulchella*, p. 375.

Tympanum nearly half the diameter of the eye; tibio-tarsal articulation reaching the eye; toes half webbed; a distinct rudiment of pollex..... 88. *bracteator*, p. 395.

Tympanum two thirds the diameter of the eye; toes three-fourths webbed; canthus rostralis rounded ..... 95. *auraria*, p. 397.

d. Outer fingers perfectly free.

a. Vomerine teeth in the middle between the choanæ, or on a level with the front edge of the latter.

Tympanum hidden; toes entirely webbed; skin of upper surfaces shagreened..... 90. *crassa*, p. 396.

Tympanum one third the diameter of the eye; toes half webbed; snout not projecting ..... 91. *plicata*, p. 396.

Tympanum nearly as large as the eye; toes webbed at the base only; two bony spines above the tympanum..... 92. *spinosa*, p. 396.

β. Vomerine teeth on a level with the hinder edge of the choanæ, or beyond the latter.

Vomerine teeth opposite the posterior margin of the choanæ ..... 55. *pulchrilineata*, [p. 378.

Vomerine teeth just behind the level of the choanæ; tympanum hardly visible; toes not quite half webbed ..... 98. *pickeringii*, [p. 399.

Vomerine teeth behind the level of the choanæ; toes three-fourths webbed.... 104. *punctariola*, [p. 401.

Vomerine teeth behind the level of the choanæ; toes about half webbed; back warty ..... 108. *spilomma*, p. 402.

Tympanum one third the diameter of the eye; toes half webbed; snout projecting 99. *curta*, p. 399.

Tympanum one fourth or one fifth the diameter of the eye; toes two-thirds webbed; tibio-tarsal articulation reaching the tip of the snout ..... 100. *elæochroa*, p. 399.

Tympanum larger than the eye; toes webbed at the base only..... 102. *gracilipes*, p. 400.

Snout very prominent; toes half webbed; tibio-tarsal articulation marking the front of the orbit..... 103. *staufferi*, p. 400.

Tympanum one fifth the diameter of the eye; tibio-tarsal articulation reaching nearly the tip of the snout; tympanum overhung by a thick dermal fold ..... 105. *bistincta*, p. 401.

Tympanum somewhat more than half the diameter of the eye; toes three-fourths webbed; tibio-tarsal articulation reaching between the eye and the tip of the snout; snout twice as long as the diameter of the eye ..... 109. *acuminata*, p. 403.

Tympanum about half the diameter of the eye; toes three-fourths webbed; tibio-tarsal articulation reaching between the eye and the tip of the snout; snout once

and a half or once and two thirds as long as the diameter of the eye ..... 110. *rubra*, p. 403.

Tympanum half the diameter of the eye; toes three-fourths webbed; tibio-tarsal articulation reaching considerably beyond the tip of the snout; snout as long as the diameter of the eye ..... 111. *funerea*, p. 404.

B. Derm of head involved in the rugose cranial ossification.

Outer fingers one-third webbed; vomerine teeth in a straight or slightly curved series on a level with the hinder edge of the choanæ..... 36. *nigromaculata*, [p. 368.

Outer fingers slightly webbed ..... 37. *septentrionalis*,

Outer fingers nearly half webbed; head as long as broad..... 38. *ovata*, [p. 368. p. 369.

Outer fingers one-third webbed; head broader than long; choanæ very large.. 39. *dominicensis*,

Outer fingers one-third webbed; posterior border of casque raised; choanæ very large ..... 40. *lichenata*, [p. 370. p. 370.

II. Palæarctic and Indian Species.

Vomerine teeth between the choanæ; no spots on sides of thighs ..... 58. *arborea*, p. 379.

Vomerine teeth on a level with the hinder edge of the choanæ; sides of body and thighs with deep black spots..... 59. *chinensis*, p. 381.

Vomerine teeth on a level with the hinder edge of the choanæ; a strong tuberculated fold from the eye to the shoulder; groin and sides of thighs with deep black spots 60. *annectens*, p. 382.

III. Australian Species.

A. Fingers at least one-third webbed.

Outer fingers extensively webbed, the membrane reaching the disks of the second and fourth; head and back granulate .. 62. *gracilenta*, p. 383.

Fingers one-third webbed; a distinct parotoid. 64. *cærulea*, p. 383.

Fingers half webbed, disks larger than the tympanum; tibio-tarsal articulation reaching the tip of the snout or beyond . 65. *dolichopsis*, p. 384.

Fingers half webbed, disks much smaller than the tympanum; tibio-tarsal articulation reaching beyond the tip of the snout ..... 66. *infrafrenata*, [p. 385.

Fingers half-webbed; tympanum small .. 67. *montana*, p. 385.

Fingers half webbed or nearly so; canthus rostralis rounded; groin and sides of thighs black-marbled..... 78. *peronii*, p. 390.

B. Fingers free or webbed at the base.

1. Vomerine teeth behind the level of the choanæ.

Vomerine teeth in two very small groups; fingers with a distinct web; toes three-fourths webbed; uniform greenish above. 61. *phyllochroa*, [p. 382.

Vomerine teeth in two groups close together; fingers free or with a slight rudiment of web; toes two-thirds or three-fourths webbed; tibio-tarsal articulation not reaching the eye ..... 112. *rubella*, p. 405.

As in the preceding, but a very distinct web between the fingers ..... 113. *congenita*, p. 406.

Vomerine teeth arranged in two small arches; fingers webbed at the base; toes three-fourths webbed; tibio-tarsal articulation not reaching the eye ..... 114. *dentata*, p. 406.

Vomerine teeth in two oblique groups; fingers free; toes half webbed; tibio-tarsal articulation reaching between the eye and the tip of the snout ..... 119. *citropus*, p. 408.

Vomerine teeth in two round groups; fingers free; toes entirely webbed; tibio-tarsal articulation reaching beyond the tip of the snout ..... [p. 412. 125. *obtusirostris*,

2. Vomerine teeth between, or on a level with the front edge of, the choanæ.

a. No outer metatarsal tubercle.

α. Toes half or two-thirds webbed.

Tympanum half or three fifths the diameter of the eye; fingers with a slight rudiment of web; tibio-tarsal articulation not reaching beyond the eye ..... 115. *ewingii*, p. 406.

Tympanum one third the diameter of the eye; vomerine teeth hardly distinguishable ..... 117. *parvidens*, p. 407.

Tympanum half the diameter of the eye; snout not longer than the eye; canthus rostralis rounded ..... 120. *thesaurensis*, [p. 409.

Tympanum half the diameter of the eye; snout a little longer than the eye; canthus rostralis distinct; tibio-tarsal articulation reaching beyond the tip of the snout ..... 121. *impura*, p. 409.

Tympanum half the diameter of the eye; snout slightly longer than the diameter

of the eye; canthus rostralis rounded; a strong fold across the chest ..... 122. *vagabunda*, p. 410.

Tympanum not quite one third the diameter of the eye; snout acuminate; canthus rostralis angular; tibio-tarsal articulation reaching beyond the tip of the snout .. 123. *arfakiana*, p. 410.

β. Toes more than two-thirds webbed, the membrane reaching the disks of the third and fifth toes.

A distinct web between the fingers; a small glandular fold from the angle of the mouth..... 63. *jervisiensis*, p. 483.

A distinct web between the fingers; snout not longer than the diameter of the eye. 116. *krefftii*, p. 407.

An indistinct web between the fingers; snout considerably longer than the diameter of the eye; canthus rostralis angular; loreal region nearly vertical .... 118. *adelaidensis*, [p. 408.

Fingers quite free; snout considerably longer than the diameter of the eye; interorbital space narrower than the upper eyelid ..... 124. *aurea*, p. 410.

b. A small outer metatarsal tubercle; disks of fingers and toes very small; fingers free, first as long as, or longer than, second.

Skin of back smooth; first and second fingers equal; tibio-tarsal articulation reaching the tip of the snout or beyond ..... 126. *lesueurii*, p. 412.

Skin of back smooth; first finger extending slightly beyond second; tibio-tarsal articulation reaching far beyond the tip of the snout ..... 127. *nigrofrenata*, [p. 413.

Skin of back smooth; first finger a little longer than second; tibio-tarsal articulation reaching the nostril or the tip of the snout; toes about half webbed .... 128. *affinis*, p. 413.

Skin of back smooth or nearly so; first finger a little longer than second; tibio-tarsal articulation reaching beyond the tip of the snout; tympanum nearly as large as the eye ..... 129. *latopalmata*, [p. 414.

Skin of back warty; first and second fingers equal; tibio-tarsal articulation reaching beyond the tip of the snout ..... 130. *freycineti*, p. 414.

Back with numerous longitudinal folds .. 131. *nasuta*, p. 415.

A narrow glandular lateral fold; toes nearly entirely webbed..... 132. *dimolops*, p. 415.

1. Hyla maxima.

Hyla langsdorffii, *Günth. Cat.* p. 98.
Seba, i. t. 72. f. 3.
Rana maxima, *Laur. Syn. Rept.* p. 32.
Calamita maxima, *Schneid. Hist. Amph.* p. 163.
Hyla palmata, *Daud. Rain.* p. 38, pl. 14, *and Rept.* viii. p. 79.
—— geographica, *Spix, Spec. Nov. Test. Ran.* p. 39, pl. 11. f. 1.
Calamita palmatus, *Merr. Tent.* p. 173.
Hypsiboas palmata, part., *Wagl. Syst. Amph.* p. 200; *Tschudi, Batr.* p. 73.
—— geographica. part., *Wagl. l. c.*
Hyla palmata, part., *Dum. & Bibr.* p. 545.
—— (Centrotelma) langsdorffii, *Burmeist. Erläuter. Faun. Bras.* p. 100.
Cinclidium granulatum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 202.
Hyla maxima, *Peters, Mon. Berl. Ac.* 1872, p. 218.

Tongue subcircular, entire, adherent. Vomerine teeth between the very large choanæ, in two angular series, forming together a /\-like figure. Head large, depressed, a little broader than long; snout subacuminate, nearly twice as long as the diameter of the eye; loreal region very oblique, concave; canthi rostrales angular, forming with the raised borders of the fronto-parietals a lozenge-shaped figure; crown concave; the greatest width of the interorbital space measures twice the width of the upper eyelid; tympanum very distinct, two thirds or three fifths the width of the eye. Three outer fingers entirely webbed; a distinct rudiment of pollex; toes entirely webbed; disks of fingers and toes smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches to the tip of the snout, or to between that point and the eye. Upper surfaces minutely granulate; belly and lower surface of thighs covered with large granules; a slight dermal fold along the outer edge of the forearm and of the tarsus; heel with a short triangular dermal appendage. Brown or reddish above, variegated with lighter and darker; limbs generally with dark cross bars; sometimes a dark vertebral line from end of snout to sacrum; lower surfaces whitish, immaculate, the male's throat brown. Male with an internal subgular vocal sac. From snout to vent 117 millim.

Guianas; Brazil.

a–b, *c*. ♂ ♀.	Demerara Falls.	
d. ♂.	Brit. Guiana.	Sir R. Schomburgk [P.].
e. ♂, skeleton.	Brit. Guiana.	
f. ♀.	—— ?	

2. Hyla appendiculata. (PLATE XXIII. fig. 2.)

Hyla geographica, *Günth. Cat.* p. 99.
Hyla (Centrotelma) geographica, *Burmeist. Erläuter.* p. 99.

Tongue subcircular, entire or slightly nicked, adherent. Vomerine teeth between the very large choanæ, in two series, forming

together a /\ or a ⌒. Head large, depressed, a little broader than long; snout subacuminate, about once and a half as long as the diameter of the eye; loreal region very oblique, slightly concave; canthus rostralis distinct; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the width of the eye. Outer fingers half or two-thirds webbed; no distinct rudiment of pollex; toes entirely webbed, or nearly so; disks of fingers and toes much smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. Upper surfaces minutely granulate; belly and lower surfaces of thighs covered with large granules; heel with a short, triangular dermal appendage. Reddish brown above, uniform or marbled with blackish; frequently an X-shaped marking on the anterior part of the back; hind limbs with narrow cross bars; heel generally with a whitish spot; sides of body nearly always with vertical blackish lines; lower surfaces whitish, immaculate, or with small brown spots on the belly. Male with an internal subgular vocal sac, and brown rugosities on the inner side of the first digit during the breeding-season. From snout to vent 68 millim.

Brazil; E. Ecuador.

a. ♀.	Bahia.	
b–d. ♂ ♀.	Santarem.	H. A. Wickham, Esq. [C.].
e. ♂.	Interior of Brazil.	
f. ♂.	Brazil.	
g–i. ♂ ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
k. ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].

3. Hyla cryptomelas.

Centrotelma cryptomelan, *Cope*, *Journ. Ac. Philad.* (2) vi. 1867, p. 204.

Tongue subcircular or suboval, entire, adherent. Vomerine teeth between the large choanæ, in two series, forming together a /‾\ or a ⌒. Head moderate, depressed, a little broader than long; snout rounded, as long as the diameter of the eye; loreal region very oblique, slightly concave; canthus rostralis distinct; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the width of the eye. Three outer fingers half webbed; no distinct rudiment of pollex; toes three-fourths webbed; disks of fingers and toes much smaller than the tympanum; subarticular tubercles moderately developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. Skin smooth, belly and lower surface of thighs granulate; heel with a short triangular dermal appendage. Reddish brown above, punctated with black. In specimen *a*, the sides of the body, the arm and inner side of forearm, the thigh (except a narrow brown band along its upper surface and a white zone on the inner two thirds of its lower surface), the lower surface of tibia and tarsus, and the hands and feet (with the exception of

e. i. ♂♀ Porto Real, Rio Janeiro. Hardy.

the outer finger and toe) deep black; in specimen *b*, the sides of the body are marbled with blackish, and the black of the limbs not so intense, the hind limbs are distinctly cross-barred with darker; the other specimens are intermediate between these two extremes. Lower surfaces white, immaculate. Male with an internal subgular vocal sac, and brown rugosities on the inner side of the first digit during the breeding-season. From snout to vent 42 millim.

Bahia; E. Ecuador.

a, b, c. ♂.	Canelos, Ecuador.	Mr. Buckley [C.].
d. ♂.	Sarayacu, Ecuador.	Mr. Buckley [C.].

4. Hyla vasta.

Hyla vasta, *Cope, Proc. Ac. Philad.* 1871, p. 219.

Vomerine teeth in two rather long transverse arches opposite the posterior margin of the choanæ. Head broad; snout short, rounded; canthus rostralis well marked, concave; vertex strongly concave; tympanum one fourth the area of the eye. Fingers and toes nearly entirely webbed; no projecting rudiment of pollex; disks immensely large, the largest being twice the size of the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin covered everywhere with small warts, which are indistinct or obsolete on the median upper surfaces of body and limbs; lower surfaces areolate-warty; forearm and tarsus bordered by a dermal fold behind, which has a scalloped thickened margin; some small dermal flaps near the vent. Colour above smoky grey, blackish on the head, with a brown band between the eyes; inner surfaces dirty flesh-colour, femur with three or four dusky cross bands, unspotted behind; throat black-spotted. From snout to vent 126 millim.

San Domingo, W. Indies.

5. Hyla faber.

Hyla maxima, *Günth. Cat.* p. 99.
Hyla faber, *Wied, Reise Bras.* ii. p. 249, *and Beitr.* i. p. 519, *and Abbild.*; *Peters, Mon. Berl. Ac.* 1872, p. 218.
—— geographica, var., *sive* semilineata, *Spix, Spec. Nov. Test. Ran.* p. 40, pl. 11. f. 2.
Hypsiboas geographica, part., *Wagl. Syst. Amph.* p. 200.
—— faber, *Wagl. l. c.*
Hyla palmata, part., *Dum. & Bibr.* p. 545.
—— palmata, *Burmeist. Erläuter.* p. 102.
—— maxima, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 183; *Hensel, Arch. f. Naturg.* 1867, p. 156.

Tongue subcircular, entire or indistinctly nicked, adherent. Vomerine teeth between the very large choanæ, in two arched or angular series, forming together a ∩ or a /\. Head rather large, depressed, broader than long; snout rounded, once and a half as

long as the diameter of the eye; loreal region very oblique, concave; canthus rostralis distinct; crown concave; the greatest width of the interorbital space measures once and a half the width of the upper eyelid; tympanum very distinct, two thirds the width of the eye. Three outer fingers half webbed; a distinct rudiment of the pollex; toes nearly entirely webbed; disks of fingers and toes smaller than the tympanum; subarticular tubercles very prominent; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or somewhat beyond. Upper surfaces perfectly smooth; belly and lower surface of thighs covered with large granules; a curved fold from the upper eyelid to the shoulder. Light brown above, generally marbled with darker; hind limbs with dark cross bars; generally a dark vertebral line from end of snout to sacrum; lower surfaces whitish, immaculate, the male's throat brown. Male with an internal subgular vocal sac. From snout to vent 90 millim.

Brazil.

a–b. ♀.	Brazil.	
c. ♂.	S. America.	
d. Yg.	Brazil.	H. W. Bates, Esq. [C.].

6. Hyla crepitans.

Hyla pardalis, *Günth. Cat.* p. 99.
Hyla doumercii, *Günth. l. c.* p. 101.
Hyla levaillantii, *Günth. l. c.* p. 102.
Hyla crepitans, *Wied, Beitr. Naturg. Bras.* p. 525, *and Abbild.*; *Peters, Mon. Berl. Ac.* 1872, p. 212, & 1873, p. 612.
Hypsiboas crepitans, *Wagl. Syst. Amph.* p. 200.
Hyla palmata, part., *Dum. & Bibr.* p. 545.
—— doumercii, *Dum. & Bibr.* p. 551.
—— levaillantii, *Dum. & Bibr.* p. 550.
—— (Hylomedusa) crepitans, *Burmeist. Erläuter.* p. 103.
—— pugnax, *Schmidt, Denkschr. Ac. Wien*, 1858, p. 243, pl. i. f. 5 & 6; *Reinh. & Lütk. Vidensk. Meddel.* 1866, p. 193.
Hypsiboas doumercii, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 201.
—— levaillantii, *Cope, l. c.* p. 200.
—— pugnax, *Cope, l. c.*

Very closely allied to *H. faber*. Fingers one-third or one-fourth webbed. Sides of body and hinder sides of thighs with vertical dark stripes. From snout to vent 72 millim.

S. America.

a. ♂.	Bogotá.	
b, *c–d*, *e–f*. ♀ & hgr.	Venezuela.	Mr. Dyson.
g–h. ♀.	Demerara.	Dr. Hancock [P.].
i. ♀.	Surinam.	Mr. Bartlett [C.].
k–n. ♂ ♀.	Garanhuns, Pernambuco.	W. A. Forbes, Esq. [P.].
o. ♀.	Barakela.	Mr. Ripon.

e ♀ Rio Grande do Sul. Ihering.
f-g. ♂♀ Porto Real, Prov. Rio Janeiro. Hardy.
h Agr. Lages Sta Catharina. Michaëlis.
i ♂ Sta Catharina. Ihering.
k-l. ♀ ♂ ♀ ♂ Porto Real. Hardy
m. ♂♀ Col. Alpina, Theresopolis Földi

p. ♀ Sta Cruz, Matto Grosso. Moore
q. Agr. Corumba, "
r. ♀ Andes of Venezuela. Hartert.

7. Hyla indris.

Hypsiboas indris, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 555.

Distinguished from *H. crepitans* in having shorter hind limbs.
Surinam.

8. Hyla circumdata.

Hypsiboas circumdatus, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 555.

Vomerine series oblique, scarcely curved. Canthus rostralis little marked. Tympanum two thirds ocular opening. Palmation of hand to middle antepenultimate phalange of longest finger; thumb an incurved, unusually elongate, osseous spur. Femoral bands ten, blackish, very narrow, and nearly surrounding the leg; seven broader bands across the tibia.

Differs from *H. crepitans* in its stouter form and much stouter feet and hands and different coloration.

Brazil.

9. Hyla rostrata.

Hyla rostrata, *Peters, Mon. Berl. Ac.* 1863, p. 466.

Tongue very large, heart-shaped, broad, slightly nicked behind. Vomerine teeth between the very large choanæ, in two series forming a ⊓. Head longer than broad; snout flat, prominent, acute, more than twice as long as the diameter of the eye; canthus rostralis distinct, concave; loreal region flat; eye very small; tympanum distinct, two thirds the diameter of the eye. Fingers with a slight rudiment of web; toes nearly entirely webbed; disks of fingers well developed, broader than long, a little larger than those of the toes; subarticular tubercles well developed; a prominent tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces with scattered small tubercles; a few longitudinal folds on the back; belly separated from the sides of the body and from the chest by a prominent fold; lower surfaces granulate. Light brown above, with darker markings; a triangular spot between the eyes; limbs cross-barred; sides of the thighs with blackish vertical bars; a curved line above the tympanum, black; yellowish beneath; throat brown. From snout to vent 40 millim.

Caracas.

10. Hyla hypselops.

Hypsiboas hypselops, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 554.

Vomerine teeth in two arched series, as in *H. crepitans*. Tongue broad. Head broad and flat; snout rather elongate, acuminate; canthus rostralis distinct, very concave; eye very large; tympanum one third the diameter of the orbit. Fingers not webbed beyond the basis of the proximal phalanges; a projecting rudiment of pollex; digital dilatations small. The hind limb being carried

forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. Skin smooth above; a slightly prominent spur on the heel. Colour above bright chestnut-brown, below pale violet; no marks on the head or back; sides of body, front and back of thighs, and intero-anterior face of femur with vertical black bands; upper surface of hind limbs with faint cross bars. From snout to vent 56 millim.

Distinguished from *H. crepitans* by its acuminate snout, larger eye, and anterior femoral bands.

Pebas, Ecuador.

11. Hyla pardalis.

Hyla pardalis, *Spix, Spec. Nov. Test. Ran.* p. 34, pl. 8. f. 3; *Peters, Mon. Berl. Ac.* 1872, p. 208.
—— (Centrotelma) lundii, *Burmeist. Erläuter.* p. 101, pl. 31. f. 5.
—— pustulosa, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 192.

Tongue circular, slightly nicked behind, nearly entirely adherent. Vomerine teeth between the rather large choanæ, in two oblique series forming a chevron, the point of which is turned forwards. Head depressed, broader than long; snout rounded, a little longer than the diameter of the orbit; canthus rostralis moderately distinct; loreal region concave; interorbital space broader than the upper eyelid; tympanum nearly two thirds the diameter of the eye. Three outer fingers half webbed; a distinct rudiment of pollex; toes nearly entirely webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin of head and back with scattered tubercles; lower surfaces granulate; a slight fold along the outer edge of forearm and tarsus. Brownish above, dotted and marbled with darker; limbs more or less distinctly cross-barred; more or less distinct vertical dark bars on the sides of the body and sometimes on the sides of the thighs (the unique specimen at my disposal does not show any on the latter parts); beneath white, immaculate. From snout to vent 65 millim. (Specimen figured by Burmeister).

Brazil.

a. Hgr. Brazil.

12. Hyla inframaculata. (Plate XXIII. fig. 3.)

Tongue circular, entire, adherent. Vomerine teeth on a level with the hinder edge of the rather large choanæ, in two slightly curved series, forming together an arch the convexity of which is turned forwards. Head moderate, depressed, a little broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis very indistinct; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Three outer fingers nearly two-thirds webbed; no prominent rudiment of pollex; toes entirely

webbed; disks of fingers half the diameter of the tympanum, of toes a little smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Head and back covered with small, irregular tubercles; beneath granulate. Grey above, indistinctly marbled with darker; sides of body and thighs and lower surface of hind limbs black- and white-marbled; lower surface of head and body whitish, brown-spotted. From snout to vent 44 millim.

Amazons.

a. ♀. Santarem. H. A. Wickham, Esq. [C.]

13. **Hyla corticalis.**

Hyla corticalis, *Günth. Cat.* p. 105.
Hyla (Lophopus) corticalis, *Burmeist. Erläuter.* p. 95, pl. 30. f. 7–12
—— corticalis, *Peters, Mon. Berl. Ac.* 1872, p. 682.

Tongue circular, slightly nicked, and scarcely free behind. Vomerine teeth in two oblique, slightly curved series behind the level of the rather large choanæ, convergent towards front. Head broader than long; snout rounded, about once and a half as long as the diameter of the orbit; canthus rostralis blunt; loreal region slightly concave; interorbital space broader than the upper eyelid; tympanum very distinct, three fourths the diameter of the eye. Three outer fingers webbed to the disks; no projecting rudiment of pollex; toes entirely webbed; disks of fingers a little smaller than the tympanum; subarticular tubercles small. The hind limb being carried forwards along the body, the tibio-tarsal marks the tip of the snout. Upper surfaces minutely tubercular; lower surfaces granulate; a denticulated fringe along the outer side of forearm and tarsus and near the vent; heel with a triangular dermal process. Brownish above, indistinctly variegated with darker; sides of body and of thighs with vertical dark lines; whitish beneath, immaculate. From snout to vent 69 millim.

Brazil.

a. ♀. Rio Janeiro. A. Fry, Esq. [P.].

14. **Hyla tuberculosa.** (PLATE XXIV. fig. 1.)

Tongue circular, entire, scarcely free behind. Vomerine teeth in two oblique series convergent towards front, behind the level of the large choanæ. Head much depressed, broader than long; snout rounded, the tip truncate, a little longer than the diameter of the orbit; canthus rostralis very distinct, strongly curved; loreal region concave; interorbital space much broader than the upper eyelid, slightly concave; tympanum very distinct, two thirds the diameter of the eye. Second and fourth fingers webbed to the disks, third to penultimate phalange; no projecting rudiment of pollex; toes entirely webbed; disks of fingers larger than the tympanum, of toes

smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. The whole of the upper surfaces covered with small warts, intermixed with large ones; lower surfaces granulate; a denticulated fringe along the outer side of forearm, outer finger, tarsus, and outer toe. Light reddish brown above, indistinctly spotted with darker; limbs with a few chestnut-brown cross bars; beneath whitish, immaculate. From snout to vent 67 millim.

Ecuador.

a. ♀.	Canelos.	Mr. Buckley [C.].

15. Hyla alboguttata. (Plate XXIII. fig. 4.)

Tongue subcircular, indistinctly nicked, and slightly free behind. Vomerine teeth between the large choanæ, in two oblique series, forming together a chevron the point of which is turned forwards. Head moderate, rather depressed, as long as broad; snout rounded, slightly longer than the diameter of the orbit; canthus rostralis distinct; loreal region concave; interorbital space as broad as the upper eyelid; tympanum very distinct, half the diameter of the eye. Fingers with a very slight rudiment of web; no projecting rudiment of pollex; toes two-thirds webbed; disks of fingers nearly as large as the tympanum, of toes smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the eye, or between the eye and the tip of the snout. Skin smooth above, granulate beneath. Light brown above, with small blackish spots; upper lip white-margined; flanks and upper surface of thighs with small round white spots, absent in one specimen; beneath whitish, with dark reticulation. From snout to vent 45 millim.

Ecuador.

a–b. ♀.	Sarayacu.	Mr. Buckley [C.].
c. ♀.	Canelos.	Mr. Buckley [C.].

16. Hyla albomarginata.

Hyla albomarginata, *Günth. Cat.* p. 98.

Hyla albomarginata, *Spix, Spec. Nov. Test. Ran.* p. 33, pl. 8. f. 1; *Dum. & Bibr.* p. 555; *Reinh. & Lütk. Vidensk. Meddel.* 1861 p. 186; *Steindachn. Novara, Amph.* p. 57; *Peters, Mon. Berl. Ac.* 1872, p. 208.

—— infulata, *Wied, Beitr. Naturg. Bras.* i. p. 533; *Burmeist. Erläuter.* p. 97, pl. 30. f. 1–6.

—— punctata, *Wied, Abbild.*

Hypsiboas albomarginata, *Wagl. Syst. Amph.* p. 201.

Tongue subcircular, entire or slightly nicked, adherent. Vomerine teeth between the large choanæ, in two series, forming together a /\ or a ^. Head moderate, a little broader than long; snout rounded sometimes rather acuminate, once and a half as long as the diameter of

h. ♀ Porto Real. Rio Janeiro. Hardy.

the eye; loreal region oblique, not concave; canthus rostralis moderately distinct; eye very prominent; upper eyelid narrow; interorbital space much broader than the latter; tympanum distinct, about half the diameter of the eye. Three outer fingers two-thirds webbed; a slight rudiment of pollex; toes nearly entirely webbed; disks of fingers as large as the tympanum, of toes smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so. Skin smooth, granulate on the belly and under the thighs; a narrow glandular lateral fold, beginning from the eye, not extending as far as sacrum; heel with a very short, triangular, dermal appendage. Yellowish or light reddish brown above, closely and minutely punctulated with brown; beneath immaculate. Male with an external subgular vocal sac. From snout to vent 60 millim.

Brazil.

a. ♀.	Para.	
b. ♀.	Bahia.	Dr. O. Wucherer [P.].
c. ♀.	Bahia.	
d. ♂.	Rio Janeiro.	A. Fry, Esq. [P.].
e. ♀.	Rio Janeiro.	Dr. Cunningham [C.].
f. ♀.	Brazil.	
g. ♀.	Brazil.	C. Darwin, Esq. [P.].

17. Hyla punctata.

Hyla punctata, *Günth. Cat.* p. 101.
Calamita punctata, *Schneid. Hist. Amph.* p. 170.
Hyla punctata, *Daud. Rain.* p. 41, *and Rept.* viii. p. 81; *Gravenh. Delic.* p. 30, pl. 6. f. 2; *Dum. & Bibr.* p. 552; *Burmeist. Erläuter.* p. 101; *Peters, Mon. Berl. Ac.* 1871, p. 403, & 1872, pp. 208 & 214; *Günth. Proc. Zool. Soc.* 1872, p. 662.
—— papillaris, *Spix, Spec. Nov. Test. Ran.* p. 34, pl. 8. f. 2.
—— variolosa, *Spix, l. c.* p. 37, pl. 9. f. 4.
Hypsiboas punctatus, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 201.
Hyla rhodoporus, *Günth. Proc. Zool. Soc.* 1868, p. 488, pl. 37. f. 4.

Tongue subcircular, entire, adherent. Vomerine teeth between the large choanæ, in two series, forming together a /\ or a ⌒. Head moderate, a little broader than long; snout rounded, once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region oblique, scarcely concave; eye very prominent; upper eyelid narrow; interorbital space broader than the latter; tympanum distinct, half or two thirds the diameter of the eye. Three outer fingers slightly webbed; a slight rudiment of pollex; toes three-fourths webbed; disks of fingers and toes smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so. Skin smooth, granulate on the belly and under the thighs. Light olive or greyish above, minutely dotted with rose or white; upper eyelid rose or white; generally a lateral streak and a few round spots on the back white;

beneath immaculate. Male with an external subgular vocal sac. From snout to vent 38 millim.

Surinam; Brazil.

a. ♀.	Surinam.	Mr. Bartlett [C.].
b. ♀.	Surinam.	Herr Kappler [C.].
c. ♂.	Bahia.	Dr. Wucherer [C.].
d. ♀.	Upper Amazon.	Mr. Bartlett [C.]. (Type of *Hyla rhodoporus*.)
e. ♀.	——?	

18. Hyla xerophylla.

Hyla xerophylla, *Dum. & Bibr.* p. 549; *Peters, Mon. Berl. Ac.* 1873, p. 613.

Hypsiboas xerophyllum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Very closely allied to *H. punctata*, from which it differs by the greater development of the web between the fingers (these being one-third webbed), and the presence of vertical brown bars on the sides of the body and the hinder side of the thighs. From snout to vent 47 millim.

Cayenne; Surinam; Nicaragua.

a. ♀. ——?

19. Hyla granosa. (Plate XXIV. figs. 2 & 3.)

Tongue subcircular, entire, adherent. Vomerine teeth between the large choanæ, in two oblique series, forming together a chevron, the point of which is turned forwards. Head moderate, broader than long; snout rounded, once and a half as long as the diameter of the eye; canthus rostralis rather indistinct; loreal region oblique, slightly concave; eye very prominent; upper eyelid narrow; interorbital space much broader than the latter; tympanum distinct, half or not quite half the diameter of the eye. Three outer fingers half webbed or nearly so; a rudiment of pollex, slight in females, claw-like in males; toes three-fourths webbed; disks as large as, or nearly as large as, the tympanum; subarticular tubercles little developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Upper surfaces, belly, and lower surface of thighs granulate. Colourless; males with a few scattered white dots on the head and back; females with a cross-streak between the eyes, a streak from the nostril, and a few spots on the back, forearms, and tibiæ, purple; upper eyelid rose, as in *H. punctata*. Male with an external gular vocal sac. From snout to vent 40 millim.

Guianas; N. Brazil; Ecuador.

a. ♀.	Demerara Falls.	
b–d. ♂.	Santarem.	H. A. Wickham, Esq. [C.].
e, *f*. ♀.	Interior of Brazil.	
g ♂.	Canelos, Ecuador.	Mr. Buckley [C.].

f. 4 Colon. Resistencia. Spegazzini.

C-k. 45. Asuncion, Paraguay. Bohls.

a. ♀ Theresopolis. Földi

20. Hyla punctillata.

Cophomantis punctillata, *Peters, Mon. Berl. Ac.* 1870, p. 651.
Hyla punctillata, *Peters, eod. loc.* 1872, p. 211.

Tongue heart-shaped. Vomerine teeth between the large choanæ, in two oblique series converging towards the front, their hinder extremities extending beyond the level of the choanæ. Head moderate; snout a little longer than the diameter of the eye, the end truncate; loreal region rather high; canthus rostralis rounded; no tympanic disk, eustachian tubes extremely minute. Outer fingers one-third webbed; toes two-thirds webbed; disks moderate. Skin smooth, granulate on the belly and under the thighs; a fold from the eye to the shoulder; heel with a short dermal spur. Bluish-grey above, closely and minutely punctulated with darker; this pigment forms a narrow streak on the femur; concealed surfaces blackish brown. From snout to vent 28 millim.

Brazil.

21. Hyla punctatissima.

Hylella punctatissima, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 200, pl. 4. f. 5.
Hyla punctatissima, *Peters, Mon. Berl. Ac.* 1872, p. 211.

Closely allied to the preceding. The snout is shorter, the eustachian tubes are more distinct, the tibio-tarsal spur is absent, the ground-colour is brown, and the punctulation larger. From snout to vent 21 millim.

Brazil.

22. Hyla fasciata.

Hyla fasciata, *Günth. Cat.* p. 100, pl. vii. f. B.
? Hyla calcarata, *Troschel, in Schomb. Reis. Brit. Guian.* iii. p. 660.
Hypsiboas fasciatus, *Cope, Proc. Ac. Philad.* 1862, p. 354.
—— calcaratus, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Tongue subcircular, slightly nicked, adherent. Vomerine teeth between the large choanæ, in two arched series, forming together a ∩. Head moderate, as long as broad, depressed: snout subacuminate, a little longer than the diameter of the orbit; loreal region oblique, concave; canthus rostralis distinct; interorbital space a little broader than the upper eyelid; tympanum distinct, half the width of the eye. Outer fingers with a slight rudiment of web, no web between the two inner; a slight rudiment of pollex; toes two-thirds webbed; disks of fingers as large as the tympanum, of toes smaller; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin smooth, granular on the belly and under the thighs; heel with a short triangular dermal appendage. Reddish brown above; a dark-brown vertebral line beginning from the tip of the snout; sides of body and of hind limbs with vertical black bars;

lower surfaces whitish, immaculate. From snout to vent 50 millim.

Ecuador; (British Guiana?).

a. ♀.	Ecuador.	Mr. Fraser [C.].	(Type.)

23. Hyla boans.

Hyla multifasciata, *Günth. Cat.* pp. 101 & 146, pl. viii. f. D.
Hyla boans, *Günth. l. c.* p. 102.
Hyla boans, *Daud. Rain.* p. 31, pl. 11, *and Rept.* viii. p. 64; *Dum. & Bibr.* p. 605; *Burmeist. Erläuter.* p. 108.
—— albopunctata, *Spix, Spec. Nov. Test. Ran.* p. 33, pl. 6. f. 5; *Peters, Mon. Berl. Ac.* 1872, p. 207.
—— oxyrhina, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 189; *Cope, Proc. Ac. Philad.* 1863, p. 48.
Hypsiboas raniceps, *Cope, Proc. Ac. Philad.* 1862, p. 353.
—— albipunctatus, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 201.

Tongue subcircular or suboval, entire or slightly nicked, adherent. Vomerine teeth between the large choanæ, in two series forming a /‾\ or a ∩. Habit slender, somewhat like *Rana agilis*. Head as long as broad, or a little longer than broad; snout subacuminate, measuring about once and one third the diameter of the orbit; the distance between the nostril and the eye equals the diameter of the latter; canthus rostralis angular, straight; loreal region not very oblique, slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, about two thirds the width of the eye. A very slight web between the three outer fingers, none between the inner; a slight rudiment of pollex; toes two-thirds webbed; disks of fingers and toes much smaller than the tympanum; subarticular tubercles well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or beyond; the tibia measures the distance from axilla to vent, or somewhat less. Skin smooth, granular on the belly and under the thighs; a narrow, straight, glandular fold from the eye above the tympanum, lost at a small distance beyond the vertical of the shoulder. Greyish or reddish brown above, generally with more or less distinct dark bands across the head, body, and limbs; sometimes a dark vertebral line; sides of head and of limbs dark brown; lower lip white, with a brown margin; beneath whitish, immaculate. Male with an external gular vocal sac. From snout to vent 70 millim.

Guianas; Brazil.

a–b. ♀.	Surinam.	Mr. Bartlett [C.].	
c. ♀.	Surinam.	Herr Kappler [C.].	
d. Hgr.	Surinam.		
e. ♂.	Pernambuco.	Sir A. Smith [P.].	
f. Hgr.	Para.	Mr. Stevens [C.].	(Type of *Hyla multifasciata*.)
g. ♀.	Santarem.	H. A. Wickham, Esq. [C.].	
h. ♀.	Brazil.	Prof. Reinhardt [P.].	(As typical of *Hyla oxyrhina*.)

k. ♀ Porto Real. Rio Janeiro. Hardy.

Hyla spegazzinii Blgr.

a-b. ♀ Asuncion, Paraguay. Bohls.
c. ♀ Rio Apa, N. Paraguay. Turin Mus.

b. ♂ Yurimaguas Hahnel.

24. Hyla lanciformis.

Hypsiboas lanciformis, *Cope, Proc. Amer. Philos. Soc.* 1870, p. 556.

Tongue oval, indistinctly nicked, adherent. Vomerine teeth between the very large choanæ, in two angular series, forming together a /\. Habit very slender. Head longer than broad; snout acuminate, once and a half as long as the diameter of the eye; the distance between the nostril and the eye is greater than the diameter of the latter; canthus rostralis angular, straight; loreal region not very oblique, concave; interorbital space as broad as the upper eyelid; tympanum very distinct, three fourths the diameter of the eye. A very slight web between the three outer fingers, none between the inner; a slight rudiment of pollex; toes three-fourths webbed; disks of fingers and toes much smaller than the tympanum; subarticular tubercles well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches far beyond the tip of the snout; the tibia measures a little more than the distance from axilla to vent. Head and back minutely granulate; belly and lower surface of thighs granulate; a narrow, straight, glandular fold from the eye above the tympanum, lost at a small distance beyond the vertical of the shoulder. Dark brown above, with darker bands across the head, body, and limbs; a blackish vertebral line; sides of head blackish; a white streak round the upper lip; sides of hind limbs blackish; disks of the three inner fingers yellowish above; brown beneath, with a few large whitish spots on the thoracic region. Male with an external gular vocal sac. From snout to vent 77 millim.

Ecuador.

a. ♂. Canelos. Mr. Buckley [C.].

25. Hyla spectrum.

Hyla spectrum, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 195.
Hypsiboas spectrum, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Tongue slightly emarginate. Vomerine teeth in two oblique series converging towards front, between the choanæ. Head large, as broad as long; snout subacuminate; canthus rostralis distinct; loreal region high, nearly vertical. Fingers webbed at the base; a projecting rudiment of pollex (?). Hind limb very slender. Skin smooth above, granulate on the belly and under the thighs; a slight fold along the forearm and tarsus; heel with a dermal appendage. Brownish above, with faint bands across the back and hind limbs; a dark vertebral line, beginning from the tip of the snout.

Brazil.

26. Hyla leprieurii.

Hyla leprieurii, *Günth. Cat.* p. 101.
Hyla leprieurii, *Dum. & Bibr.* p. 553.
Hypsiboas leprieurii, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Tongue subcircular or suboval, entire or slightly nicked, and slightly free behind. Vomerine teeth in two series between the large choanæ, forming together an arch the convexity of which is turned forwards. Head moderate, depressed, as long as broad. Snout rounded or subacuminate, once and a half as long as the diameter of the eye; loreal region not very oblique, slightly concave; canthus rostralis angular, nearly straight; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Three outer fingers one-third webbed; no rudiment of pollex; toes nearly entirely webbed; disks much smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Upper surfaces smooth, or covered with small round tubercles, especially in males; beneath granulate; a fold above the tympanum. Greyish or reddish brown above, with dark-brown spots or cross bands; a dark cross band between the eyes appears to be constant; loreal and temporal regions dark brown; a more or less distinct light spot under the eye: upper surface of limbs with dark cross bands; sides of body and limbs brownish, immaculate; beneath whitish, immaculate. Male with two large vocal vesicles, each being situated behind the angle of the mouth; during the breeding-season the inner side of the first finger is covered with brown rugosities; sometimes also brown rugosities may be seen on the tubercles of the upper surfaces and under the toes, as in *Pelodytes punctatus*. From snout to vent 54 millim.

S. America.

a–b, c–d, e, f, g–l, m–o, p. ♂ ♀.	Demerara Falls.	
q–s. ♂.	Interior of Brazil.	
t–u. v. ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].
w. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].

27. Hyla buckleyi. (Plate XXV. fig. 1.)

Tongue subcircular, entire, slightly free behind. Vomerine teeth in two series between the large choanæ, forming together an arch the convexity of which is turned forwards. Head moderate, rather depressed, as long as broad, or a little broader than long; snout rounded, once and a half as long as the diameter of the eye; loreal region very oblique, concave; canthus rostralis distinct, curved; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, two thirds or three fourths the diameter of the eye. Three outer fingers one-third webbed; no rudiment of pollex; toes nearly entirely webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so far. Upper surfaces smooth in females, tubercular in males; beneath granulate; a slight fold above the tympanum. Greyish or brownish above, marbled with dark brown; sometimes a light vertebral stripe; limbs with dark

Hgr. Yarinaguas Hahnel.

cross bars; hinder side of thighs marbled with brown; beneath whitish, more or less dotted or reticulated with brown. Male with two vocal vesicles, each being situated behind the angle of the mouth; during the breeding-season the inner side of the first finger is covered with brown rugosities. From snout to vent 55 millim.

Closely allied to *H. leprieurii*, from which it differs chiefly by the more oblique loreal region and curved canthus rostralis.

Ecuador.

a. Several spec., ♂ ♀.	Canelos.	Mr. Buckley [C.].
b, *c–e*. ♂ ♀.	Sarayacu.	Mr. Buckley [C.].
f. ♀.	Paitanga.	Mr. Buckley [C.].

28. Hyla taurina.

Osteocephalus taurinus, (*Fitz.*) *Steindachn. Arch. per la Zool.* ii. fasc. i. p. 77, pl. 6. f. 1–3.

? Osteocephalus flavolineatus, *Steindachn. l. c.* p. 80, pl. 6. f. 4–7.

Trachycephalus (Osteocephalus) taurinus, *Steindachn. Novara, Amph.* p. 64.

? Trachycephalus (Osteocephalus) flavolineatus, *Steindachn. l. c.*

Tongue suboval, entire, scarcely free behind. Vomerine teeth between the very large choanæ, in two arched series, forming together a /‾\. Head large, depressed, a little broader than long; skull strongly ossified in the adult, rugose, the derm, however, being free, the edges of the fronto-parietals forming two more or less prominent carinæ; snout rounded, about once and two thirds as long as the diameter of the eye; loreal region oblique, deeply concave; canthus rostralis very strong, straight; interorbital space broader than the upper eyelid; tympanum very distinct, nearly as large as the eye. Three outer fingers nearly half webbed; no rudiment of pollex; toes entirely webbed; disks not much smaller than the tympanum; subarticular tubercles very prominent. The hind limb being carried along the body, tho tibio-tarsal articulation reaches the tip of the snout, or nearly so. Upper sufaces smooth or tubercular; lower surfaces granulate; a fold above the tympanum. Reddish, brownish, or blackish above, spotted or marbled with darker; limbs with broad dark cross bars; flanks sometimes white-spotted; beneath whitish, throat and chest spotted with brown. Male with two large external vocal vesicles, each being situated behind the angle of the mouth; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 100 millim.

Guianas; N. Brazil; Colombia.

a–b, *c–f*. ♂ ♀.	Demerara Falls.	
g. ♀.	Vryheids Lust, Demerara.	Rev. W. T. Turner [C.].
h. ♀.	Surinam.	Herr Kappler [C.].
i–m. ♂, ♀, & hgr.	Santarem.	H. A. Wickham, Esq. [C.].
n. ♀.	Caracas.	

29. Hyla langsdorffii.

Hyla langsdorffii, *Dum. & Bibr.* p. 557.
Osteocephalus langsdorffii, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 200.

Tongue oval, entire, scarcely free behind. Vomerine teeth in two arched series, the convexity of which is turned forwards, between the very large choanæ. Head large, depressed; snout rounded; loreal regions concave; canthus rostralis distinct, rounded, with small pits and prominences; crown concave, the borders of the fronto-parietals forming two prominent ridges, which unite on the occiput; tympanum very distinct, three fourths the diameter of the eye. Three outer fingers nearly entirely webbed, the two last phalanges of third free; toes entirely webbed. Upper surfaces covered with very small conical tubercles; lower surface granulate; a denticulated fringe along the outer edge of the forearm and fourth finger and of the tarsus and fifth toe. Upper surfaces marbled with grey, whitish, light brown, and dark brown; limbs with large black spots, transversely dilated; white beneath; a large black spot beneath the vent, and reticulations of the same on each side. From snout to vent 98 millim.

Brazil.

30. Hyla planiceps.

Osteocephalus planiceps, *Cope, Proc. Ac. Philad.* 1874, p. 122.

Tongue oval, adherent. Vomerine teeth in two curved transverse series between the posterior portions of the very large choanæ. Head broad and plane on the upper surface to the straight and rectangular canthus rostralis; loreal region nearly vertical; upper surface of skull rugose with ossific deposit, which nowhere penetrates the free derm; the lateral margins of the fronto-parietals indicated by delicate angular ridges; the diameter of the eye equals the space between it and the nostril; tympanum three fourths the diameter of the eye. Fingers free; no projecting rudiment of pollex; toes three-fourths webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. Back minutely tubercular, belly and sides coarsely areolate; a short tubercular fold from orbit to behind scapula. Above uniform dark brown; a light border to the upper lip, and a lighter line from the orbit to the angle of the mouth; dermal scapular fold pale-edged; femur and tibia with dark cross bands on the exposed surfaces. From snout to vent 60 millim.

Nauta, Upper Amazon.

31. Hyla venulosa.

Hyla lichenosa, part., *Günth. Cat.* p. 102.
Hyla venulosa, *Günth. Cat.* p. 104.
Merian, Ins. Surin. t. 56; *Seba*, i. t. 71, f. 1 & 2, & t. 72. f. 4.
Rana venulosa, *Laur. Syn. Rept.* p. 31.

a. ♂ Sta Catharina. Ihering.
b. ♀ Porto Real, R. Janeiro. Hartig.

o, p. ♂ & hyp. Presidio, W. Mexico. Forrer.
q. ♂ Asuncion, Paraguay. Bohls
r. ♀ Andes of Venezuela Hartert.
s. ♀ Belcdero, Costa Rica. Underwood.

Hyla tibiatrix, *Laur. l. c.* p. 34; *Daud. Rain.* p. 36.
Rana zebra, var. venulosa, *Shaw, Zool.* iii. p. 124.
—— meriana, *Shaw, l. c.* p. 133.
Calamita boans, *Schneid. Hist. Amph.* p. 164; *Merr. Tent.* p. 173.
Hyla venulosa, *Daud. Rain.* p. 35, pl. 13, *and Rept.* viii. p. 74; *Gravenh. Delic.* p. 24; *Dum. & Bibr.* p. 560; *Guichen. Rept. in Casteln. Anim. nouv. ou rares*, p. 84; *Burmeister, Erläuter.* p. 106; *Steindachn. Novara, Amph.* p. 58, pl. 3. f. 18; *Peters, Mon. Berl. Ac.* 1872, p. 219, & 1873, p. 613.
—— zonata, *Spix, Spec. Nov. Test. Ran.* p. 41, pl. 12. f. 1.
—— bufonia, *Spix, l. c.* p. 42, pl. 12. f. 2.
Hypsiboas venulosa, *Wagl. Syst. Amph.* p. 201; *Tschudi, Batr.* p. 72.
Auletris tibiatrix, *Wagl. l. c.*
Dendrohyas tibiatrix, *Tschudi, Batr.* p. 74.
Hyla vermiculata, *Dum. & Bibr.* p. 563.
Scytopis hebes, *Cope, Proc. Ac. Philad.* 1862, p. 354.
Acrodytes venulosus, *Cope, Nat. Hist. Rev.* 1865, p. 109.
Scytopis venulosus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 85.

Tongue circular, entire or indistinctly nicked, and slightly free behind. Vomerine teeth on a level with the hinder edge of the choanæ, forming generally a straight interrupted series, sometimes a very open chevron, the point of which is directed forwards. Head moderate, broader than long; snout short, rounded, a little longer than the diameter of the orbit; canthus rostralis rounded; loreal region concave; interorbital space as broad as the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers one-third or one-fourth webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks as large as, or nearly as large as, the tympanum; subarticular tubercles very prominent; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum or the eye. Upper sufaces generally warty; a fold above the tympanum; in old specimens, the derm of the region limited by this fold frequently thickened into a parotoid; lower surfaces granulate. Brown above, spotted or marbled with darker; hind limbs with broad dark cross bars; lower surfaces whitish, immaculate. Male with two very large external vocal vesicles, each being situated behind the angle of the mouth; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 93 millim.

S. America.

a. ♀.	Berbice.	
b–c. ♀.	Better Hope, British Guiana.	Rev. W. T. Turner [C.].
d. ♀.	British Guiana.	
e. ♂.	Surinam.	Herr Kappler [C.].
f, g. ♂ ♀.	Cayenne.	
h. ♀.	Para.	R. Graham, Esq. [P.].
i–k. ♂.	Santarem.	H. W. Bates, Esq. [C.].
l. Hgr.	Amazons.	Dr. Günther [P.].
m. ♀.	Pernambuco.	Sir A. Smith [P.].
n,. Skeleton.	S. America.	

(32. Hyla nigropunctata.)

Hyla lichenosa, part., *Günth. Cat.* p. 102, pl. viii. f. C.

Very closely allied to *H. venulosa*, from which it differs principally by a smaller tympanum. The diameter of the latter equals one third or one half the diameter of the eye, and equals in size the digital disks. Upper surfaces covered with large flat warts; derm of parotoid region thickened, limited by a strong fold above the tympanum. Brown above, generally with small black round spots; generally a broad white band from the upper eyelid to the loin; limbs not, or indistinctly, cross-barred; lower surfaces whitish, immaculate. From snout to vent 62 millim.

Mexico.

a. ♀.	Jalapa.	Mr. Hoege [C.].	
b–e. Hgr. & yg.	Vera Cruz.		
f. Hgr.	Cordova.	M. Sallé [C.].	Types of *Hyla lichenosa*.
g. Hgr.	Mexico.		
h–i. Hgr. & yg.	Mexico.		

33. Hyla mesophæa.

Hyla leucophyllata, *Burmeist. Erläuter.* p. 104, pl. 31. f. 1.
—— mesophæa, *Hensel, Arch. f. Naturg.* 1867, p. 154; *Peters, Mon. Berl. Ac.* 1872, p. 772.

Tongue circular, entire, and slightly free behind. Vomerine teeth in a straight interrupted series on a level with the hinder edge of the choanæ. Head broader than long; snout short, rounded, scarcely longer than the diameter of the orbit; canthus rostralis rounded; loreal region concave; interorbital space as broad as the upper eyelid; tympanum two thirds the diameter of the eye. Fingers one-third webbed; toes nearly entirely webbed; disks of fingers nearly as large as the tympanum, of toes a little smaller; subarticular tubercles very prominent; a slight tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces with small smooth warts; a strong fold from the upper eyelid to the shoulder; throat, belly, and lower surface of thighs largely granulate. The back covered by a large dark reddish-brown spot, distinctly limited from the light reddish brown of the remaining parts, but blending posteriorly into the light coloration of the hind limbs; the anterior limit of this spot is a straight line drawn across the front of the interorbital space and the upper eyelids; the lateral borders of this spot, to the sacral region, very light, almost white; limbs immaculate; lower surfaces whitish, immaculate. From snout to vent 46 millim.

Brazil.

a. ♀.	Bahia.	Dr. Wucherer [C.].

b. ♂ Sta Catharina. Ihering.

= Hyla venulosa.

34. Hyla quadrangulum. (PLATE XXV. fig. 2.)

Tongue circular, entire, and slightly free behind. Vomerine teeth on a level with the hinder edge of the choanæ, in a nearly straight interrupted series. Head moderate, broader than long; snout short, rounded, slightly longer than the diameter of the orbit; canthus rostralis moderately distinct, slightly curved; loreal region concave; interorbital space a little broader than the upper eyelid; tympanum very distinct, half the diameter of the eye. Three outer fingers half webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks as large as the tympanum; subarticular tubercles rather small, not very prominent; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin of head and back thick, minutely pitted; lower surfaces granulate; a fold above the tympanum. Greyish olive above; a large quadrangular dark-brown spot begins between the eye and ends on the sacrum; other dark-brown spots on the sides and the hind part of the back; a blackish line along the canthus rostralis; limbs regularly cross-barred; beneath dirty white, immaculate. From snout to vent 58 millim.

Ecuador.

a. ♀. W. Ecuador. Mr. Fraser [C.].

35. Hyla coriacea.

Hyla coriacea, *Peters, Mon. Berl. Ac.* 1867, p. 711.

Tongue subcircular, indistinctly emarginate, and slightly free behind. Vomerine teeth a little behind the level of the choanæ, in a nearly straight interrupted series. Head moderate, broader than long; snout short, rounded, slightly longer than the diameter of the orbit; canthus rostralis moderately distinct, straight; loreal region slightly grooved; interorbital space a little broader than the upper eyelid; tympanum very distinct, not quite two thirds the diameter of the eye. Three outer fingers extensively webbed, the membrane reaching the disks of the second and fourth, the penultimate phalange of the third; no projecting rudiment of pollex; toes webbed to the disks; latter as large as the tympanum; subarticular tubercles small, not very prominent; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin of head and back thick, leathery, minutely pitted; sides largely areolate; lower surfaces granulate; a fold above the tympanum. Chestnut-brown above; a narrow light line forms a hourglass-shaped figure beginning between the eye and ending on the sacrum; behind this a few transverse light lines; axilla black; lower surfaces brownish white, immaculate. Male with two large external vocal vesicles, each being situated behind the angle of the mouth. From snout to vent 62 millim.

Surinam.

a. ♀. Surinam. Herr Kappler [C.].

36. Hyla nigromaculata.

Trachycephalus geographicus, *Günth. Cat.* p. 118.
Trachycephalus nigromaculatus, *Tschudi, Batr.* p. 72.
—— geographicus, *Dum. & Bibr.* p. 536; *Steindachn. Novara, Amph.* p. 63.
—— marmoratus, *Steindachn. Verh. zool.-bot. Ges. Wien,* 1864, p. 243, pl. 9. f. 3.

Tongue subcircular, entire, scarcely free behind. Vomerine teeth in a straight or slightly curved, scarcely interrupted series on a level with the hinder edge of the choanæ. Head moderate, a little broader than long, rough, the derm involved in the cranial ossification; snout rounded, once and a half or once and two thirds as long as the diameter of the eye; loreal region oblique, concave; canthus rostralis angular; crown slightly concave: interorbital space much broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Three outer fingers one-third webbed; no rudiment of pollex; toes nearly entirely webbed; disks of fingers about as large as the tympanum, of toes rather smaller; subarticular tubercles well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye or a little beyond. Upper surfaces smooth or with small tubercles; lower surfaces granulate; a curved fold above the tympanum. Brown or olive above, marbled with darker; whitish beneath, immaculate. Male with two external vocal vesicles, each being situated behind the angles of the jaws; during the breeding-season the inner side of the first finger is covered with blackish rugosities. From snout to vent 90 millim.

Brazil.

a. ♀.	Brazil.	Lord Stuart [P.].
b–c. ♂ ♀.	S. America.	

37. Hyla septentrionalis.

Trachycephalus marmoratus, *Günth. Cat.* p. 117.
Dendrohyas septentrionalis, *Tschudi, Batr.* p. 74.
Trachycephalus marmoratus, *Bibr. in R. de la Sagra, Hist. Cuba, Rept.* t. 29; *Dum. & Bibr.* p. 538; *Cope, Proc. Ac. Philad.* 1863, p. 44; *Steindachn. Novara, Amph.* p. 63; *Gundlach, Repert. Fis. nat. de Cuba,* ii. p. 118.
? Hyla brunnea, *Gosse, A Naturalist's Sojourn in Jamaica,* p. 361.
Trachycephalas insulsus, *Cope, l. c.* p. 43.
? Trachycephalus wrightii, *Cope, l. c.* p. 45.

Tongue subcircular, generally broader than long, entire or scarcely emarginate, and slightly free behind. Vomerine teeth between the moderate-sized choanæ, in two straight or slightly arched series. Head moderate, broader than long in full-grown specimens, as long as broad in half-grown and young; derm of head involved in the rugose cranial ossification; posterior outline of casque openly emarginate; snout rounded, about once and one third as long as the diameter of the orbit; the distance from the nostril to the eye

♀. ♀ Grand Cayman I? Cockerell.

equals the diameter of the latter; loreal region oblique, concave; canthus rostralis strongly marked, with a slight point or ridge at a small distance from the orbit; crown concave in the adult; interorbital space much broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers slightly webbed; no projecting rudiment of pollex; toes two-thirds webbed; disks of fingers nearly as large as the tympanum, of toes smaller; subarticular tubercles well developed; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces smooth or tubercular; lower surfaces granulate; a fold above the tympanum. Greyish or olive above, spotted or marked with darker; hinder side of thighs reticulated with blackish; beneath whitish, immaculate. Male with two external vocal vesicles, each being situated near the angle of the mouth; during the breeding-season the inner side of the first finger covered with blackish rugosities. From snout to vent 75 millim.

W. Indies.

a–d. ♀ & hgr.	Cuba.	Zoological Society [P.].
e, f–k. ♀ & hgr.	Cuba.	
l–q. ♂, hgr., & yg.	S. Domingo.	
r. Skeleton.	——?	

38. Hyla ovata.

Trachycephalus dominicensis, part., *Günth. Cat.* p. 118.
Trachycephalus ovatus, *Cope, Proc. Ac. Phil.ad.* 1863, p. 44.

Tongue subcircular, entire or scarcely emarginate, and slightly free behind. Vomerine teeth between the rather large choanæ, in two straight or slightly arched series. Head moderate, as long as broad; derm of head involved in the rugose cranial ossification; posterior outline of casque nearly straight; snout rounded, once and a half or once and one third as long as the diameter of the orbit; the distance between the nostril and the eye equals the diameter of the latter; loreal region oblique, concave; canthus rostralis strongly marked; crown concave in the adult; interorbital space much broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Three outer fingers nearly half webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks of fingers as large as the tympanum, of toes smaller; subarticular tubercles well developed; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the eye, the tip of the snout, or between these two points. Upper surfaces smooth or sparsely tuberculous; beneath granulate; a fold above the tympanum. Brown above, variegated with darker; beneath whitish, immaculate. From snout to vent 72 millim.

W. Indies.

a. ♀.	S. Domingo.	M. Sallé [C.].
b. ♀.	Jamaica.	
c. Hgr.	Hayti.	Zoological Society [P.].

39. Hyla dominicensis.

Trachycephalus dominicensis, part., *Günth, Cat.* p. 118.
Hypsiboas dominicensis, (*Bibr.*) *Tschudi, Batr.* p. 72.
Trachycephalus dominicensis, *Dum. & Bibr.* p. 536.
—— scutigerus, *Cope, Proc. Ac. Philad.* 1863, p. 45.

Tongue broader than long, openly emarginate, and slightly free behind. Vomerine teeth between the very large choanæ, in two series, forming together an arch the convexity of which is turned forwards. Head large, broader than long; derm of head involved in the rugose cranial ossification; posterior outline of casque openly emarginate; snout rounded, the tip vertically truncated, about once and a half as long as the diameter of the orbit; the distance between the nostril and the eye is considerably greater than the diameter of the latter; canthus rostralis angular, straight; loreal region not very oblique, concave; crown slightly concave; interorbital space nearly three times the width of the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Three outer fingers one-third webbed; no projecting rudiment of pollex; toes three-fourths webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth above, granulate beneath; a fold above the tympanum. Brown above, variegated with darker; loreal and temporal regions blackish brown; hind limbs with regular blackish-brown cross bars; beneath whitish, throat and chest brown-dotted. From snout to vent 75 millim.

W. Indies.

a. ♀.	Jamaica.	N. Wilson, Esq. [P.].
b. ♀.	W. Indies.	

40. Hyla lichenata.

Trachycephalus lichenatus, *Günth. Cat.* p. 118.
Trachycephalus lichenatus, *Gosse, A Naturalist's Sojourn in Jamaica,* p. 362, pl. 7; *Cope, Proc. Ac. Philad.* 1863, p. 46.
—— anochlorus, *Gosse, l. c.*; *Cope, l. c.*

Tongue subcircular, a little broader than long, entire, slightly free behind. Vomerine teeth between the very large choanæ, in two straight or slightly arched oblique series, convergent towards front. Head rather large, broader than long, rough, bony, the derm involved in the cranial ossification; snout rounded, the tip vertically truncate; loreal region oblique, concave; canthus rostralis curved, forming a sharp elevated ridge; crown concave; interorbital space very broad, measuring the distance from the eye to the tip of the snout; hinder edge of casque raised, doubly convex; a supratympanic ridge; tympanum very distinct, two

d. ♀ Cape Hayti. Linnæa.

c. ♂ Jamaica. W. B. Expent.

t-v. ♂♀ Presidio, W. Mexico. Forrer.
w. ♀ Ventanas, Mexico. "
x. Manzanillo. Cozumel I? Gaumer
y. ♀ Hda. Sta. Gertrudis, Mascota, Jalisco. Buller.
z-Y. ♂♀ Chontales, Mines, Nicaragua. Rer
8-ε. ♀ Hacienda Rosa de Jericho, Nicaragua. Rothschild

thirds or three fourths the diameter of the eye. Three outer fingers one-third webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks of fingers as large as, or rather larger than, the tympanum, of toes smaller; subarticular tubercles well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin of upper surfaces more or less roughly tubercular; some prominent elevations near vent, two on the heel, and several on the tarsus and forearm. Brown above, variegated with darker; whitish beneath, throat brown-spotted. Male with an internal subgular vocal sac. From snout to vent 117 millim.

Jamaica.

a. ♀.	Jamaica.	Mrs. Mauger [P.].
b. ♀.	Jamaica.	
c. ♂.	W. Indies.	T. C. Eyton, Esq. [P.].
d–e. ♀.	W. Indies.	
f. ♀, skeleton.		

41. **Hyla baudinii.**

Hyla baudinii, *Günth. Cat.* p. 105.
Hyla baudinii, *Dum. & Bibr.* p. 564; *Brocchi, Bull. Soc. Philom.* (7) i. p. 124.
—— vanvloeti, *Baird, Proc. Ac. Philad.* 1854, p. 61.
—— muricolor, *Cope, Proc. Ac. Philad.* 1862, p. 359.
Smilisca daulinia, *Cope, Proc. Ac. Philad.* 1865, p. 194.
—— baudinii, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Hyla pansosana, *Brocchi, l. c.* p. 125.

Tongue circular, entire or slightly nicked, and free behind. Vomerine teeth in a straight interrupted series in the middle between the choanæ. Head broader than long; snout rounded, a little longer than the diameter of the orbit; canthus rostralis angular; loreal region concave; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, two thirds or three fourths the diameter of the eye. Fingers one-third, toes three-fourths webbed; disks considerably smaller than the tympanum; subarticular tubercles very prominent; a distinct fold along the inner side of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath; a fold above the tympanum. Olive or greyish above, spotted or marbled with dark brown or dark green; hind limb with dark cross bars; nearly always a black spot behind the tympanum; lower surfaces whitish, immaculate. Male with two external vocal vesicles, one on each side of the throat. From snout to vent 68 millim.

Central America; Texas.

a–c, d. ♂ ♀.	Mexico.	Hugo Finck, Esq.
e, f. ♂ ♀.	Mexico.	M. Sallé [C.].

g–h, i, k. ♂ ♀.	Mexico.	
l, m. ♀ & hgr.	Vera Cruz.	
n. ♀.	Vera Paz.	O. Salvin, Esq. [C.].
o, p, q. ♂ ♀.	Coban.	O. Salvin, Esq. [C.].
r–s. ♂.	Honduras.	

42. Hyla gabbii.

Hyla gabbii, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 103.

Allied to *H. baudinii*; differing in the following points:—Tympanum less than half the area of the orbit. Fingers half webbed, the disks about equal to the tympanum. Colour ashy brown, the pigment forming a narrow band on the upper face of the femur; anterior and posterior faces of femur dusky, uniform; some large irregular brown spots on the back; groin marbled with light brown and white; lip with a faint pale border, no large spots on it or the lores; tibia and forearm with broad pale-brown cross bands; lower surfaces all whitish. From snout to vent 56 millim.

Costa Rica.

43. Hyla salvini.

Tongue subcircular, entire, and slightly free behind. Vomerine teeth in two short transverse series between the choanæ. Head moderate, as long as broad; snout rounded, longer than the diameter of the orbit; canthus rostralis distinct; loreal region oblique, slightly concave; interorbital space slightly broader than the upper eyelid; tympanum distinct, half the diameter of the eye. Three outer fingers three-fourths webbed; no projecting rudiment of pollex; toes entirely webbed; disks nearly as large as the tympanum; subarticular tubercles not much developed; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin smooth above, or with scattered very small tubercles; a slight denticulation along the outer side of the forearm; beneath granulate. Uniform brown above; hind limbs with indistinct darker cross bands; sides of body and of thighs with brown reticulation; beneath whitish, immaculate. From snout to vent 55 millim.

Costa Rica.

a. ♀.	Cartago.	
b. ♀.	Costa Rica.	O. Salvin, Esq. [C.].

44. Hyla versicolor.

Hyla versicolor, *Günth. Cat.* p. 103.

? Hyla verrucosa, *Daud. Rain.* p. 33, pl. 4. f. 1.

Hyla versicolor, *Leconte, Ann. Lyc. N. H. New York*, i. p. 281; *Harlan, Journ. Ac. Philad.* v. p. 343; *Holbr. N.-Amer. Herp.* i. p. 101, pl. 17; *Dum. & Bibr.* p. 566; *Dekay, New York Faun.*,

Hyla copii Blgr.

a-b. ♂ El Paso, Texas. Forrer. (Types)

c. ♀ Rancho Santa Cruz, Real de la Tesca.
Buller.

g-k. ♂♀. Bloomington, Ind. Bollman.

l. ♀ Duval Co., Texas. Taylor.

Rept. p. 71, pl. 21. f. 53 *a* ; *Leconte, Proc. Ac. Philad.* 1855, p. 428 ; *Wied, Nov. Act.* xxxii. p. 116.
Dendrohyas versicolor, *Tschudi, Batr.* p. 75.

Tongue circular, slightly nicked, and free behind. Vomerine teeth in two straight or slightly oblique groups on a level with the hinder edge of the choanæ. Head broader than long ; snout rounded, as long as, or slightly longer than, the diameter of the orbit ; canthus rostralis distinct ; loreal region slightly concave ; interorbital space as broad as, or a little broader than, the upper eyelid ; tympanum very distinct, about two thirds the diameter of the eye. Fingers one-third, toes three-fourths webbed ; disks smaller than the tympanum ; subarticular tubercles moderate ; a very distinct fold along the inner side of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum or the posterior corner of the eye. Upper surfaces with small smooth warts, lower surfaces granulate ; a strong fold across the chest. Greyish or olive above, with irregular darker markings and dark cross bars on the limbs ; sides of thighs yellow, with a black network ; beneath immaculate. Male with a large, dark-coloured, external subgular vocal sac. From snout to vent 53 millim.

Eastern North America.

a. ♂.	Canada.	J. Howell, Esq. [P.].
b. ♂.	Chippaway.	
c. ♂.	New York.	
d. ♀.	Philadelphia.	
e. ♀.	N. America.	Dr. J. Green [P.].
f. ♂.	(Mexico ?)	

45. Hyla arenicolor.

Hyla affinis, (*non Spix*) *Baird, Proc. Ac. Philad.* vii. 1854, *and U.S. Mex. Bound. Surv., Rept.* p. 29, pl. 38. f. 4–7.
—— arenicolor, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 84.

Tympanum two thirds the size of the eye. Fingers one-third webbed. Tibia reaching more than halfway from vent to centre of eye. Body rough. Colour ash-grey or green, with numerous rounded dorsal blotches ; three transverse bands on each thigh and leg ; no vermiculation on anterior and posterior faces of hind legs nor on lower part of sides ; a light spot under the eye. From snout to vent 45 millim.

Northern Sonora.

46. Hyla cadaverina.

Hyla nebulosa, (*non Spix*) *Hallow. U.S. R. R. Surv.* x., *Williamson's Rep., Rept.* p. 21, pl. 10. f. 2.
—— cadaverina, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 84.

Tongue subcircular, openly emarginate, and free behind. Vomerine teeth in two oblique groups between the choanæ. General

form of *H. versicolor*, but the extremities more slender. Back covered with minute pustulations. Uniform light grey above; a considerable number of dark-coloured subcircular spots, about a line in diameter, scattered over the upper part of the body and upon the sides, in some specimens mingled with irregular blotches upon the back; lower surfaces immaculate. From snout to vent 40 millim.

Tejon Pass, California.

47. Hyla regilla.

Hyla regilla, *Baird & Gir. Proc. Ac. Philad.* 1852, p. 174, & 1853, p. 301; *Girard, U.S. Explor. Exp., Herp.* p. 60, pl. 3. f. 13–18; *Brocchi, Bull. Soc. Philom.* (7) i. p. 127.

—— scapularis, *Hallow. Proc. Ac. Philad.* 1852, p. 183, & 1854, p. 97, *and U.S. R. R. Surv.* x., *Williamson's Rep., Rept.* p. 21.

Tongue subcircular, slightly nicked, and free behind. Vomerine teeth in two groups on a level with the hinder edge of the choanæ. Head moderate, broader than long; snout rounded, about as long as the diameter of the orbit; canthus rostralis distinct; loreal region not concave; interorbital space as broad as the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers with a slight rudiment of web; toes half webbed; disks a little smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Upper surfaces with small smooth warts; lower surfaces granulate; a strong fold across the chest. Olive or greenish above; a dark streak on each side of the head, through the eye, becoming much broader behind the latter; generally a few dark spots on the upper surface of body and dark bands across the limbs; beneath immaculate. Male with an external subgular vocal sac. From snout to vent 37 millim.

Western North America; (Vera Paz?).

a–b. ♂ ♀.	Vancouver's Island.	J. K. Lord, Esq. [P.].
c, d–h. ♀, hgr., & yg.	Vancouver's Island.	Col. Hawkins [P.].
i–n. ♀, hgr., & yg.	San Juan, New Orcades.	H.M.S. 'Plumper.'
o. ♂.	Sumass Prairies.	Boundary Comm.
p. ♀.	Nassa Creek, California.	
q–r. Hgr.	California.	

48. Hyla fusca*.

Hyla fusca, *Daud. Rain.* p. 43, *and Rept.* viii. p. 5; *Dum. & Bibr.* p. 573.

Calamita fuscus, *Merr. Tent.* p. 170.

Tongue circular, nicked, and free behind. Vomerine teeth in two

* The specimen mentioned under this name in the 'Catalogue of Batrachia Salientia' is evidently of a quite different species. This I have not been able to identify with any of those described. The specimen is in a bad state of preservation.

S. ♂ Gt. Bear Lake. Richardson
t-v. ♂♀ Santa Cruz, Cal. Townsend.
w-z. ♀ hgr. San Diego, Cal. Eigenmann.

small groups between the choanæ. Snout short, rather truncate; canthus rostralis distinct; loreal region nearly vertical; tympanum half the diameter of the eye. Fingers rather slender, webbed at the base; toes two-thirds webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the tip of the snout. Skin smooth above, granulate beneath; a fold above the tympanum, and another across the chest. Uniform chestnut-brown above, whitish beneath. From snout to vent 42 millim.

America?

49. Hyla zebra.

Hyla zebra, *Dum. & Bibr.* p. 575.

Vomerine teeth on a level with the hinder edge of the choanæ. Fingers one-third, toes four-fifths webbed. Head covered with small granules. Flanks with large black spots; thighs with broad black bands alternating with narrower white ones. Otherwise as in *H. fusca*. From snout to vent 64 millim.

Buenos Ayres.

50. Hyla pulchella.

Hyla agrestis, *Günth. Cat.* p. 105.
Hyla prasina, *Günth. l. c.*
Hyla pulchella, *Dum. & Bibr.* p. 588; *Steindachn. Abh. zool.-bot. Ges. Wien*, 1864, p. 211, pl. 9. f. 2.
? Hyla leucomelas, *Dum. & Bibr.* p. 576.
Hyla agrestis, *Bell, Zool. Beagle, Rept.* p. 46, pl. 19. f. 3; *Cunningh. Trans. Linn. Soc.* xxxii. p. 468.
—— prasina, *Burmeist. Erläuter.* p. 106, pl. 31. f. 2; *Giebel, Zeitschr. Ges. Naturwiss.* xxix. p. 28.
—— lateralis, *Raddi, Mem. Soc. Ital.* xix. p. 67.
—— rubicundula, *Hensel, Arch. f. Naturg.* 1867, p. 158.

Tongue subcircular, entire, and free behind. Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Head rather small, about as long as broad; snout rounded, longer than the diameter of the eye; canthus rostralis distinct; loreal region nearly vertical; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum very distinct, about half the diameter of the eye. Fingers slightly webbed; no projecting rudiment of pollex; toes two-thirds or three-fourths webbed; disks smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or nearly so. Skin smooth or minutely granulate above, strongly granulate beneath; a fold from the eye to the shoulder, above the tympanum. The specimens at my disposal show two varieties of coloration, which are perhaps

simply sexual characters, as all the specimens of the first variety are females and those of the second are males. In the former, the upper surfaces are greenish, immaculate; a white, beneath black-margined streak extends from the eye to the groin, and another along the outer side of the tibia. In the latter variety, the upper surfaces are brownish, spotted or marbled with darker; the white streaks on the sides of the body and legs are not distinguishable, and the sides of the head and body are darker, especially on the loreal and temporal regions. In both varieties the upper lip is white-margined, at least from the vertical of the eye, and the groin and the sides of the thighs are spotted with deep black. Male with an external subgular vocal sac, covered by an ∧-shaped fold of the skin. From snout to vent 50 millim.

Brazil; Uruguay; Buenos Ayres.

a–b. ♀ & yg.	Maldonado.	C. Darwin, Esq. [P.]. (Types of *Hyla agrestis*.)
c–e. ♀.	Monte Video.	Dr. Cunningham [P.].
f. ♀, skeleton.	Monte Video.	
g–i. ♂ ♀.	Soriano, Uruguay.	— Havers, Esq. [P.].
k. ♂.	Buenos Ayres.	Ernest Gibson, Esq. [P.].
l–m. Hgr.	Buenos Ayres.	E. W. White, Esq. [C.].

51. Hyla vauteri. = *H. pulchella*.

Hyla vauterii, *Günth. Cat.* p. 106.
Hyla vauterii, (*Bibr.*) *Bell, Zool. Beagle, Rept.* p. 45, pl. 19. f. 2; *Hensel, Arch. f. Naturg.* 1867, p. 157.

Agrees in every respect with *H. pulchella* but in the position of the vomerine groups; these are rather oblique, forming together a very open chevron the point of which is turned forwards. Reddish brown above, spotted with darker; a dark streak along the canthus rostralis, and a dark band on the temporal region; groin and thighs spotted as in *H. pulchella*. From snout to vent 39 millim.

Uruguay; S. Brazil.

a. ♀.	Maldonado.	C. Darwin, Esq. [P.]. (Type.)

52. Hyla nasica.

Hyla nasica, *Cope, Proc. Ac. Philad.* 1862, p. 354.
? Hyla granulata, *Peters, Mon. Berl. Ac.* 1871, p. 651.

Tongue elliptic, scarcely emarginate. Vomerine teeth in two transverse contiguous short rows between the choanæ. Head small, as long as broad; snout depressed, prominent, faint. Fingers free or nearly so. Skin above slightly tuberculous. Above dark rufous-brown, with some darker longitudinal markings on the back; a dark band from snout through tympanum to side; femur and posterior lateral region varied with dark brown; beneath pale, uniform. From snout to vent 1 inch 5 lines.

Resembles *H. vauteri*, but the head is smaller, narrower, and

n-q. ♂♀ — ? Salmin.
r-s. ♂♀ Uruguay.
t. Several specs. ♂ Catamarca. Donner.
w. 2 yg. Rio Grande do Sul. Ihering.
v. 2 many specs.
♂ ♀ hgr. 2 young } " "
w. ♀ 2 ages Sta Catharina. Michaëlis.
x. 1 yg. Rio Grande do Sul. Ihering.

Hyla bischoffii Blgr.
a-c. ♂♀ Sta. Catharina. Michaëlis.
d-g. ♂♀ Theresopolis, Sta Catharina. Fruhstorfer.
h-k. ♀. Mundo Novo, Rio Grande do Sul.
Bischoff. (Types)

Several spees.

a- ♂♀ ~~L. Leseuig~~, Rio Grande do Sul. Ihering
b. ♂ Soriano, Uruguay. Havers
c. ♂ Paraguay. Linnæa
~~f-g. ♂♀ Rio Grande.~~ ~~Ihering~~
d-f. ♂♀ Lag.s, Sta Catharina Michaëlis.
g-h. ♀ R. Capivari, Parana. "
i. Hyl. Colow. Resistencia. Spegazzini.
k-l. " Rio Grande do Sul. Ihering.
m-p. ♂♀ chy. Palmeira, Parana. Fiebrig.
q. Several spees. Asuncion, Paraguay. Bohls.

Hyla phrynoderma, Blgr.

a-b. ♂ Colow. Resistencia. Spegazzini. (Types)

Hyla glandulosa, Blgr.

a-b. ♀ Guatemala. Godman (Type)

more acuminate; the tongue is more elongate, and the vomerine teeth are more anterior.

Paraguay; (S. Brazil).

53. Hyla carolinensis.

Hyla carolinensis, *Günth. Cat.* p. 105.
Catesby, Nat. Hist. Carol. ii. pl. 71.
Hyla viridis, var. β, *Laur. Syn. Rept.* p. 33.
Calamita carolinensis, *Penn. Zool. Arct.* ii. p. 331.
—— cinereus, *Schneid. Hist. Amph.* p. 174.
Rana bilineata, *Shaw, Zool.* iii. p. 136.
Hyla lateralis, *Daud. Rain.* p. 16, pl. 2. f. 1; *Leconte, Ann. Lyc. New York*, i. p. 278; *Harl. Journ. Ac. Philad.* v. p. 341; *Dum. & Bibr.* p. 587; *Leconte, Proc. Ac. Philad.* 1855, p. 428.
—— viridis, *Holb. N.-Amer. Herp.* iv. pl. 29.
—— semifasciata, *Hallow. Proc. Ac. Philad.* 1856, p. 307.

Tongue subcircular, entire or slightly nicked, and free behind. Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Head rather small, about as long as broad; snout rounded, about once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region not very oblique; interorbital space a little broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Fingers one-third webbed: no projecting rudiment of pollex; toes three-fourths webbed: disks smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or slightly beyond. Skin smooth or minutely granulate above, granulate beneath. Greenish above, immaculate; a white streak on the upper lip, extending along the sides of the body; another along the inner side of the tibia. Male with an external subgular vocal sac. From snout to vent 50 millim.

S.E. North America.

a–b. ♀.	New Orleans.
c–e. ♂ & hgr.	N. America.

54. Hyla uranochroa.

Hyla uranochroa, *Cope, Journ. Ac. Philad.* (n. s.) viii. p. 103, pl. 27. f. 4.

Tongue circular, slightly nicked, and scarcely free behind. Vomerine teeth in two small groups between the choanæ. Head moderate, as long as broad; snout rounded, about once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region slightly oblique; interorbital space broader than the upper eyelid; tympanum distinct, somewhat more than half the diameter of the eye. Fingers one-third webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles moderate. The

hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth above, granulate beneath. Purplish blue above, immaculate, the colour sharply defined along the sides; upper lip white-margined; beneath whitish, immaculate. From snout to vent 32 millim.

Costa Rica.

a. ♀. Costa Rica.

55. Hyla pulchrilineata.

Hyla pulchrilineata, *Cope, Proc. Amer. Philos. Soc.* xi. 1869, p. 163.

Form that of *H. arborea*. Tongue slightly free behind. Vomerine teeth in a single transverse series opposite the posterior margin of the choanæ; the latter much larger than the ostia pharyngea. Canthus rostralis distinct; loreal region concave; eye large, tympanum one fourth its size. Fingers free; toes webbed to the base of the penultimate phalange; disks well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the orbit. Skin smooth above; granules of the abdomen unusually weakly developed. Pale ashy brown above, with five longitudinal citron-yellow bands, the outer broadest; femora finely yellow above and behind; a yellow longitudinal line on both the inner and outer sides of the tibia. From snout to vent 38 millim.

San Domingo.

56. Hyla andersonii.

Hyla andersonii, *Baird, Proc. Ac. Philad.* vii. 1854, p. 61; *Cope, eod. loc.* 1862, p. 154.

In proportions and general appearance similar to *H. arborea*. Tongue broad, slightly emarginate. Vomerine teeth in two oblique series between the choanæ, each directed inward and backward. Tympanum about one third the size of the eye. Skin of upper surfaces smooth, minutely corrugated; lower surfaces granulate; a fold across the chest. Above dull olive-brown; the concealed surfaces of limbs, especially those in contact with each other, thickly sprinkled with circular yellowish-white spots on a pale brown ground, seen also on the armpits and sides of body behind; a postocular dark vitta extended down the sides, and sending a dark branch across the arm to the chin; no bars on the limbs. From snout to vent about 2 inches.

United States—New Jersey to South Carolina.

57. Hyla eximia.

Hyla euphorbiacea, *Günth. Cat.* p. 109, pl. x. f. C.
Hyla eximia, *Baird, Proc. Ac. Philad.* 1851, p. 61, *and U.S. Mex. Bound. Surv.* p. 29, pl. 38. f. 8–10; *Peters, Mon. Berl. Ac.* 1869, p. 880; *Brocchi, Bull. Soc. Philom.* (7) i. p. 128.
—— euphorbiacea, *Steindachn. Novara, Amph.* p. 59.

h. ♀ Presidio, W. Mexico. Forrer.
i. l. ♂♀ Ciudad. "
m. ♀ Sierra de Cuyatlan, Guadalajara
3,800 metres. Buller.

Hyla stepheni, Blgr.

a. ♂, bad state. Port Hamilton, Corea. Stephen
(Type
b-c. ♂♀ ~~♀~~ Ussuri R. Fischer

Closely allied to *H. arborea*. The head is smaller, the fingers are more slender, and the web between them very indistinct; the toes are only one-third or half webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum or the posterior border of the eye. Olive above: a brown, light-edged streak from the nostril through the eye and the tympanum, along the side of the body; upper lip with a brown and light margin; beneath whitish, immaculate. Male with an external subgular vocal sac. From snout to vent 40 millim.

Mexico.

A. Back with elongate spots more or less confluent into longitudinal bands. (*H. eximia.*)

a. ♀.	City of Mexico.	Mr. Doorman [C.].	
b–e. ♀.	Mexico.	M. Sallé [C.].	Types of *H. euphorbiacea*.
d. Skeleton.	Mexico.	M. Sallé [C.].	
e. ♂.	Cordova.	M. Sallé [C.].	
f–g. ♂.	Cordilleras.		

B. Back uniform; hinder side of thighs brownish, white-spotted. (*H. euphorbiacea.*)

58. Hyla arborea.

Hyla arborea, *Günth. Cat.* p. 107.

Rana arborea, *Linn. S. N.* i. p. 357; *Rösel, Hist. Ran.* p. 32, pls. 9–12; *Sturm, Deutschl. Faun.* iii. Heft 1.

Hyla viridis, *Laur. Syn. Rept.* p. 33; *Daud. Rain.* p. 14, pl. 1, *and Rept.* viii. p. 23; *Gravenh. Delic.* p. 23; *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 581; *Fatio, Vert. Suisse*, iii. p. 423; *Lessona, Atti Ac. Linc.* i., *Mem. Cl. Sc.-fis. &c.* 1877, p. 1090, pl. 3.

Calamita arboreus, *Schneid. Amph.* p. 153; *Merr. Tent.* p. 170.

Hyla arborea, *Cur. R. A.*; *De Betta, Faun. Ital., Rett. Anf.* p. 61; *Schreib. Herp. Eur.* p. 106; *Leydig, An. Batr.* p. 94.

Hyas arborea, *Wagl. Syst. Amph.* p. 201.

Dendrohyas arborea, *Tschudi, Batr.* p. 74.

Tongue subcircular, slightly nicked, and free behind. Vomerine teeth in two small transverse or slightly oblique groups between the choanæ. Head moderate, broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region slightly oblique, slightly concave; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum distinct, about half the diameter of the eye. Fingers slightly webbed at the base; no projecting rudiment of pollex; toes two-thirds webbed; disks a little smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or a little beyond. Skin smooth above, granulate beneath. Greenish above, uniform whitish beneath. Male with a large, brown, external gular vocal sac. From snout to vent 51 millim.

Europe; temperate Asia; North Africa.

Typical form.

Upper surfaces normally uniform; a greyish or black, light-edged streak from the nostril through the eye and the tympanum along the side of the body, sending upwards and forwards a branch on the loin; a whitish line on the upper lip, descending to the shoulder, and then ascending to the eye, limiting an elongate green zone; a whitish, dark-edged cross line above the vent; the outer side of the forearm, carpus and fourth finger, tibia, tarsus, metatarsus, and fifth toe more or less distinctly edged with a blackish and whitish line.

a–b. ♂.	Hamburg.	Dr. Fricke [P.].
c. ♂.	Harz Mountains.	
d. ♀.	Transylvania.	Messrs. C. G. Danford & J. A. H. Brown [P.].
e. ♀.	Corfu.	R. Fretwell, Esq. [P.].
f. ♂.	Victoria Alaba, Spain.	Lord Lilford [P.].
g. ♀.	Oporto.	
h. Hgr.	Guezama.	Sir W. C. Trevelyan [P.].
i–l. ♀.	Africa.	
m. ♀.	Giaour Dagh (Asia Minor).	C. G. Danford, Esq. [P.].

Var. A. (**savignyi**).

Hyla savignyi, *Aud. Descr. Egypte*, i. *Supplem.* p. 183, pl. 2. f. 13.
Rana arborea, *Seetzen, Reise Syr. Paläst.* iii. p. 486.
Hyla arborea, var. meridionalis, part., *Boettger, Jahresb. Senck. Naturf. Ges.* 1879–80, p. 212.

Similar to the typical form, but the marking on the loin is absent; the lateral streak frequently broken up into spots from the middle of the side.

n. ♂.	Elba.	Sir W. C. Trevelyan [P.].
o. ♀.	Asia Minor.	Haslar Collection.
p. ♂.	Jerusalem.	Rev. H. B. Tristram [C.].
q–s. ♂ ♀.	Wady el Kurm.	Rev. H. B. Tristram [C.].
t–u. ♂ ♀.	Dead Sea.	Rev. H. B. Tristram [C.].
v. ♀.	Lake of Galilee.	H. W. Beddome, Esq. [C.].
w. Many spec., ♂ ♀.	Euphrates Expedition.	
x–y. Hgr.	Near Resht, Ghilan, N. Persia.	W. T. Blanford, Esq. [C.].
z. Hgr.	Hainan.	R. Swinhoe [C.].

Var. B. (**meridionalis**).

Hyla arborea, var. meridionalis, *Boettg. Abh. Senck. Ges.* 1874, p. 66.
—— viridis, *Lataste, Herp. Gir.* p. 214.
—— perezi, *Bosca, Ann. Soc. Esp.* ix. 1880, p. 181, *and eod. loc.* x. pl. 2. f. 7–10.

The upper surfaces normally uniform greenish; the green colour extends on each side of the throat, where it vanishes gradually; a

aa - cc.	♀	Creta.	Linnæa.
dd.	♀	Couña	Sevane.
ee.	Many larvæ	St Malo	
ff - gg.	♂♀	Serra S. Bruno, Calabria.	Florence Mus.
hh.	♀	I.d of Bornholm, Baltic.	Copenhagen Mus.
ii	♂	Ferreira, Apennines.	Howes.
kk	♀	Ravenna.	Parâtre
ll	♂	N.t St. Malo.	Boulenger.
mm.	♂	Ciudad Real.	Boscá.
nn	♂	Zante, Ionian Isl.s	Werner.
oo	♂	Pressburg, Hungary.	Mihelij.

a' - b'.	♀ & yg.	Gensan, Corea.	Leech.
c'	♀	Cyprus.	Lilford.
d'.	♀.	Fao, Head of Persian Gulf.	Cuming.
e'	♂	Ichang.	Pratt.
f'	Ys.	Seoul, Korea	Campbell.
g' h'	♂♀	Lake Bamas, Syria.	Barrois
i' k'	Ys.	Larva. Ain-el-Mousaich, Syria.	"
l'	♂	Kazerun, Persia.	Butcher.

α'-γ'. ♂♀ S. France. Héron Royer.
(As typical of H. barytonus)
δ'-ζ'. ♂♀ Gironde Latastе.
η'. Several spec. Tangiers. Vaucher.
θ'. ♂ Regli, nr Genoa. Poulton.
ι'-λ' Algr. Minas de S. Domingo, Alentejo. Gadow
μ'-ν'. ♂♀ Cannes. Gepp.
ξ'. ♂ Seville. Gadow.
ο'. Larvæ & yg. Nice. Bedriaga.
π'-ρ' ♂♀ Hammam Meskoutine, Algeria.
Anderson
ϛ'. ♂ Cabeza del Buzy, Spain. Boscá.
(Type of H. peresi)
τ'-υ'. ♂♀ in copula. S. France. Héron Royer
φ'. ♂ ♀ ♀ Nice. Bedriaga. (Types of H. barytonus)
χ'. Several spec. Seville. Calderon.

6-τ ♂♀ Kobe, Japan. (Challenger Expd.
υ ♀ Kiga, " Anderson
φ ♀ Daibutz " "
χ-ω. ♂♀ & yg. Japan. Leech.
αα-ββ. ♂♀ & yg. Tsu Shima. Holst.
γγ yg. Osen Mt. Shimabara. "

blackish, light-edged line from the nostril to the eye, continued behind the latter, covering entirely or partially the tympanum, not extending beyond the shoulder; a whitish cross streak above the vent; a whitish line along the inner edge of the tibia and the outer edge of the tarsus, metatarsus, and fifth toe.

α. ♂.	Bologna.	J. J. Bianconi [P.].
β–*δ*. ♂ ♀.	Canary Islands.	R. B. Webb, Esq. [P.].
ε, *ζ*–*η*. ♀ & hgr.	Madeira.	R. B. Webb, Esq. [P.].
θ–*ι*. ♂.	Teneriffe.	R. MacAndrew, Esq. [P.].
κ–*μ*. ♂.	Tunis.	P. L. Sclater, Esq. [P.].

Var. C. (intermedia).

Agrees with the typical form in having a lateral line and a mark on the loin; but the green extends on the sides of the throat, as in var. *meridionalis*.

ν. ♀.	Bologna.	J. J. Bianconi [P.].
ξ. ♀.	Palermo, Sicily.	Dr. O. Boettger [P.].

Var. D. (japonica).

Hyla arborea, var. japonica, *Schleg. Faun. Japon.* p. 112, pl. 3. f. 6.
—— japonica, *Camerano, Atti Acc. Torin.* xiv. 1879, p. 895.

A narrow dark streak from nostril to eye; a broad streak from the eye, covering the tympanum; sides with a dark, light-edged streak not extending to the groin, or with irregular dark spots; back generally with large, irregular, constant dark spots; limbs with dark cross bands; upper lip light-margined.

ο–*ρ*. ♀ & hgr.	Japan.	Leyden Museum.

59. Hyla chinensis.

Hyla arborea, var. chinensis, *Günth. Cat.* p. 108, pl. ix. f. C.
Hyla chinensis, *Günth. Rept. Brit. Ind.* p. 436; *Camerano, Atti Acc. Torin.* xiv. 1879, p. 894.
—— arborea, var. chinensis, *Steindachn. Novara, Amph.* p. 59.

Abundantly different from *H. arborea*. The vomerine teeth are more posterior, being situated on a level with, and extending somewhat beyond, the hinder edge of the choanæ. The head is rather smaller, and the loreal region more vertical. The hind limb is shorter, the tibio-tarsal articulation reaching only the tympanum or the posterior border of the eye. Blue-green above, immaculate; a brown streak from the tip of the snout through the eye and the tympanum to the shoulder; sides of body and thighs with deep black spots on a white ground; on the thighs the green is reduced to a narrow band; tarsi, feet, and hands not coloured; beneath whitish, immaculate. Male with a large external subgular vocal sac; during the breeding-season the inner side of the first digit bears brown rugosities. From snout to vent 39 millim.

Southern China.

a–b, *c–g*. ♂, ♀, & hgr.	China.		Types.
h. Skeleton.	China.		
i–k. Hgr.	Formosa.	R. Swinhoe, Esq. [C.].	
l. ♀ (bad state).	Chusan?	E. I. Coll.	

60. Hyla annectens.

Polypedates annectens, *Jerdon, Proc. As. Soc.* 1870, p. 84.
Hyla annectens, *Günth. Proc. Zool. Soc.* 1875, p. 576.

Differs from *H. arborea* and *H. chinensis* in having stouter hands and feet, and a strong tuberculated fold from the eye to the shoulder, over the tympanum. The vomerine teeth are on a level with the hinder edge of the choanæ. The shape of the head as in *H. arborea*. The tibio-tarsal articulation marks the tympanum or the eye. Blue-green above; a dark, above light-edged lateral streak, ending in two or three deep black, separate or confluent spots on the groin; sides of the thighs with deep black spots on white ground; the green forms a band along the thighs; two outer fingers and two outer toes green; beneath whitish, immaculate. Male with an external subgular vocal sac. From snout to vent 49 millim.

N. India.

a. Many spec.: ♂, ♀, & hgr.	Khassya.	T. C. Jerdon, Esq. [P.]. (As typical of *Polypedates annectens*.)

61. Hyla phyllochroa.

Hyla phyllochroa, *Günth. Proc. Zool. Soc.* 1863, p. 251, pl. 30. f. C.: *Steindachn. Novara, Amph.* p. 61.

Tongue subcircular, slightly nicked, and free behind. Vomerine teeth in two very small groups behind the level of the choanæ. Head moderate, broader than long; snout subtriangular, as long as the diameter of the orbit; canthus rostralis angular; loreal region nearly vertical; interorbital space broader than the upper eyelid; tympanum distinct, one third the diameter of the eye. Fingers webbed at the base; no distinct rudiment of pollex; toes three-fourths webbed; disks of fingers a little larger than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath; a fold above the tympanum; a strong fold across the chest. Blue-green above, flanks and sides of thighs purplish brown; a narrow black, above white-edged line from the eye, above the tympanum, lost at a short distance from the shoulder. From snout to vent 36 millim.

Eastern Australia.

a. ♀.	Sydney.	G. Krefft, Esq. [C.].	Types.
b. ♀.	Sydney.		
c. ♀.	Errumanga.		

n. ♀ Taiwanfoo, S. Formosa. Taiwanfoo Mus.
n. Hgr. Sze Chuen. Christiania Mus.
p. Hgs. Da lan san., Ningpo R., Chikiang, 2000 ft.
Bassett-Smith.
Several spces., ♂♀ ♂♀ ns. Taiwanfoo. Holst.

g. ♂♀ ♂hgr. Kakhien Hills. Fea.
ll.

Hgr. Barrawang. Fletcher.
♀ Mt Wilson. "

Hyla macrops, Blgr.

a. ♂ Treasury Is. Guppy. (Type)
b-d. ♀ " "
e-f. ♂♀ Guadalcanar. Woodford.
g. Many larvæ " "
h. Several specs., ♂♀. Gela. "

d, e-f. ♀♂ Port Mackay Lving Roths.

Hyla chloris, Blgr.

a. ♂ Dunoon, Richmond R. New South Wales
Fletcher. (Type)

62. Hyla gracilenta.

Hyla gracilenta, *Peters, Mon. Berl. Ac.* 1869, p. 789.
? Pelodryas granulata, *Peters, cod. loc.* 1873, p. 417, pl. 1. f. 4.
Hyla fordii, *Günth. Mus. Godeffr.* xii. p. 47.

Tongue subcircular, slightly nicked, and free behind. Vomerine teeth in two very small groups in the middle between the choanæ. Head moderate, broader than long; snout subtriangular, as long as the diameter of the orbit; canthus rostralis angular; loreal region slightly oblique; interorbital space broader than the upper eyelid; tympanum rather indistinct, about two thirds the diameter of the eye. Three outer fingers extensively webbed, the membrane reaching the disks of the second and fourth; no distinct rudiment of pollex; toes nearly entirely webbed; disks about half the diameter of the eye; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Exposed upper surfaces, belly, and lower surface of thighs granulate; a strong fold across the chest. Exposed upper surfaces blue-green; upper surface of thighs purple; a white line on canthus rostralis, outer border of upper eyelid, and above the tympanum; another along the outer edge of forearm, tibia, and tarsus: beneath white, immaculate. Male with a large external subgular vocal sac. From snout to vent 40 millim.

E. Australia.

a–c. ♂ & hgr. Rockhampton. (Types of *H. fordii*.)

63. Hyla jervisiensis.

Hyla jervisiensis, *Dum. & Bibr.* p. 580.
Litoria jervisiensis, *Peters, Mon. Berl. Ac.* 1873, p. 612.

Allied to *H. cærulea*. Vomerine teeth in two groups on a level with the front edge of the choanæ. Fingers webbed at the base. A small glandular fold from the angle of the mouth. Whitish grey above; a brown streak on canthus rostralis and another on temporal region; beneath white. From snout to vent 47 millim.

Jervis Bay, Australia.

64. Hyla cærulea.

Pelodryas cæruleus, part., *Günth. Cat.* p. 119, pl. ix. f. B.
Rana cærulea, *White, Journ. N. S. Wales, App.* p. 248; *Shaw, Zool.* iii. p. 113; *Daud. Rain.* p. 70; *Merr. Tent.* p. 174.
—— australasiæ, *Schneid. Hist. Amph.* p. 150.
Hyla cyanea, *Daud. Rept.* viii. p. 43.
Calamita cyanea, *Fitzing. Class. Rept.* p. 64; *Tschudi, Batr.* p. 73; *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 204.
Calamites cæruleus, *Wagl. Syst. Amph.* p. 200.
Hyla cyanea, part., *Dum. & Bibr.* p. 577.
Pelodryas cæruleus, *Günth. Proc. Zool. Soc.* 1863, p. 250; *Keferst. Arch. f. Naturg.* 1868, p. 288, pl. 8. f. 32.
Calamites cyaneus, part., *Steindachn. Novara, Amph.* p. 66.

Tongue circular, free and very slightly notched behind. Vomerine teeth in two slightly oblique series on a level with the hinder edge of the choanæ. Head broader than long; snout rounded, truncate; canthus rostralis distinct; loreal region slightly concave; the diameter of the eye equals its distance from the nostril; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers one-third webbed; no projecting rudiment of pollex; toes nearly entirely webbed; subarticular tubercles well developed; disks large, those of fingers as large as or somewhat larger than the tympanum, of toes a little smaller; a slight cutaneous fold along the inner side of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches hardly the eye. Skin smooth, above much thickened and studded with large pores on the hind part of the head and on the scapular region, this glandular region delimited outwards by a strong curved fold beginning from the posterior angle of the eye; belly and lower surface of thighs granulate. Blue-green above, whitish beneath. Male with an internal subgular vocal sac; during the breeding-season brown rugosities on the inner side of the first finger. From snout to vent 83 millim.

Australia.

The coloration varies:—

A. Spots none; light line along the tarsus none or very indistinct.

a. ♀.	N. Australia.	Dr. J. E. Elsey [P.].
b. ♀.	Port Essington.	Earl of Derby [P.].
c–e. ♂.	Port Essington.	Mr. Gould.
f. ♀.	Murray Island.	Mr. Macfarlane [C.].
g. ♀.	Thursday Isl., Torres St.	Dr. Coppinger [C.].

B. Sides of body with white or pinkish, dark-edged spots; a similar spot on humerus; sometimes small spots of the same colour on the back; a streak of same on the upper lip, from the vertical of the centre of the eye, generally interrupted under the tympanum, extending to the shoulder; another streak along the outer side of forearm and outer finger, the inner side of tibia, and the outer side of tarsus and fifth toe; throat sometimes blue, with pinkish spots.

h. ♂.	Nicol Bay, N.W. coast of Australia.	Mr. Du Boulay [C.].
i–l. ♂ & hgr.	Port Essington.	Earl of Derby [P.].
m. ♀.	Moreton Bay.	
n. Yg.	Sydney.	Dr. Günther [P.].
o. ♀.	Australia.	Voyage of the 'Herald.'

65. Hyla dolichopsis.

Pelodryas cæruleus, part., *Günth. Cat.* p. 119, pl. ix. f. *b*.
Hyla cyanea, *Schleg. Abbild.* pl. 9. f. 2.

p. ♀ Port Darwin. Buckland.
v. ♀ Pt Mackay, Lucensland. Living Coll.
r-w. ♂♀ Mer I., Torres Straits. Haddon.
v. ♀ Queensland. Christiania Mus.

j. ♀ Timor Laut. Brit. Assoc.
g. h. ♀ Larat, Jeninber 1st Ridley.
i. ♀ Amboyna. Werner.
k. ♀ Ferguson I., D'Entrecasteaux group. Mc

Hyla lutea, Blg.
a-c. ♂ Faro R., Solomons. Woodford (Types)

Hyla cyanea, part., *Dum. & Bibr.* p. 577.
Calamites cyaneus, part., *Steindachn. Novara, Amph.* p. 66.
Calamita dolichopsis, *Cope, Journ. Ac. Philad.* (2) vi. 1867, p. 204.
Pelodryas militarius, *Ramsay, Proc. Linn. Soc. N. S. Wales*, ii. p. 28; *Macleay, ibid.* p. 138.

Differs from *H. cærulea* in the following points:—Snout longer, twice as long as the diameter of the eye; fingers half webbed; disks larger, considerably larger than the tympanum; hind limb much longer, the tibio-tarsal articulation reaching the tip of the snout, or beyond. Skin of head and scapular regions not, or but very slightly, thickened, without large pores. Lower lip with a white, below brown-edged, margin; a white streak along the outer edge of forearm and tarsus. Size larger—from snout to vent 115 millim.

Austro-Malaysia.

a. ♂.	New Guinea.	Dr. Coppinger [C.].
b. ♀.	Misol Island.	
c–d. ♂ ♀.	Duke of York Island.	Rev. G. Brown [C.].
e. ♂, skeleton.		Antarctic Expedition.

66. Hyla infrafrenata. (Plate XXVI. fig. 1.)

Hyla infrafrenata, *Günth. Ann. & Mag. Nat. Hist.* (3) xx. 1867, p. 56.

Agrees in every respect, in coloration as well as in structural characters, with *H. dolichopsis*, but the digital disks are much smaller than the tympanum. From snout to vent 45 millim.

North Australia.

a. Hgr.	Cape York.	(Type.)

67. Hyla montana.

Hyla montana, *Peters & Doria, Ann. Mus. Civ. Genov.* xiii. 1878, p. 423, pl. 7. f. 1.

Tongue subcordiform. Vomerine teeth in two groups between the choanæ. Snout rounded; canthus rostralis distinct; tympanum small. Fingers half webbed; no distinct rudiment of pollex; toes entirely webbed; disks moderate. Skin smooth above; belly and lower surface of thighs granulate. Upper surfaces olive-brown; yellow beneath, dotted with brown. From snout to vent 62 millim.

New Guinea.

68. Hyla albopunctulata. (Plate XXIV. fig. 4.)

Tongue small, circular, adherent. Vomerine teeth in a scarcely interrupted transverse series behind the level of the moderate-sized choanæ. Head moderate, broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal

region slightly concave; interorbital space much broader than the upper eyelid; tympanum very small, indistinct. Three outer fingers half webbed, or nearly so; no projecting rudiment of pollex; toes entirely webbed; disks well developed; subarticular tubercles very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the eye. Skin smooth, slightly granulate on the belly and under the thighs. Reddish brown above (this colour produced by minute specks), dotted with white; a white line round the upper lip and along the outer edge of the forearm and tarsus; lower surfaces not coloured. Male with an external gular vocal sac. From snout to vent 33 millim.

Ecuador.

a. ♂.	Sarayacu, Ecuador.	Mr. Buckley [C.].
b–e. ♂.	Ecuador.	Mr. Buckley [C.].

69. Hyla pulverata.

Hyla pulverata, *Peters, Mon. Berl. Ac.* 1873, p. 614.

Tongue hardly nicked behind. Vomerine teeth in two groups between the choanæ. Snout as long as the diameter of the eye; canthus rostralis rounded; tympanum very small, rather indistinct. Three outer fingers extensively webbed, the membrane reaching the disks of the second and fourth; toes nearly entirely webbed. Skin smooth, belly and lower surface of thighs granulate. Colourless, with scattered white dots, more numerous on the sides of the head. From snout to vent 24 millim.

Chiriqui.

70. Hyla reticulata.

Hyla reticulata, *Espado, Jorn. Sc. Lisb.* ix. 1870, p. 61, *and Viaj. Pacif., Vert.* pl. 3 bis. f. 7.

Tongue subcordiform, slightly free behind. Vomerine teeth in two transverse groups between the choanæ. Head moderate; snout rounded; canthus rostralis scarcely distinct; tympanum rather indistinct. Fingers half, toes two-thirds webbed; disks well developed. Skin smooth, granulate on the belly and under the thighs. Green above, with large round orange spots. From snout to vent 33 millim.

Ecuador.

71. Hyla microps.

Hyla microps, *Peters, Mon. Berl. Ac.* 1872, p. 682.

Tongue heart-shaped. Vomerine teeth in a scarcely interrupted series on a level with the hinder edge of the choanæ. Snout as long as the diameter of the eye, truncate in front; loreal region as long as high; canthus rostralis distinct, though rounded; tympanum very small, one third the diameter of the eye. Neck a little narrower than the head. Three outer fingers nearly half webbed;

toes two-thirds webbed; disks of fingers larger than the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Head and upper eyelids with small tubercles; beneath granulate. Reddish chocolate-colour above; a dark triangular spot between the eyes; small spots and dots on the head; two large irregular dark spots on each side of the back; latter with small dots; axilla and loin surrounded by a black band; between these, along the side, two or three large irregular spots on reddish-white ground; limbs cross-barred; hinder side of thighs colourless or yellow, separated from the coloured upper surface by a black line; lower surfaces yellow, sides of belly and throat scantily dark-punctate. From snout to vent 30 millim.

Neufreiburg, Brazil.

72. Hyla leucophyllata.

Hyla leucophyllata, *Günth. Cat.* p. 112.

Hyla leucophyllata, *Beivis, Schrift. Berl. naturf. Freunde*, iv. p. 178, pl. 41. f. 4; *Shaw, Zool.* iii. p. 127; *Gravenh. Delic.* p. 31; *Dum. & Bibr.* p. 607; *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 243; *Cope, Proc. Amer. Philos. Soc.* 1869, p. 156.

Calamita leucophyllatus, *Schneid. Hist. Amph.* p. 168; *Merr. Tent.* p. 172.

Hyla frontalis, *Daud. Rain.* p. 24, pl. 7, *and Rept.* viii. p. 45.

—— elegans, *Wied, Abbild., and Beitr.* i. p. 529.

Hypsiboas leucophyllatus, *Tschudi, Batr.* p. 72.

Hyla triangulum, *Günth. Proc. Zool. Soc.* 1868, p. 489, pl. 38. f. 4.

? Hyla ebraccata, *Cope, Proc. Ac. Philad.* 1874, p. 68.

Tongue circular, slightly nicked and free behind. Vomerine teeth in two small groups between the choanæ. Head rather small, broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region nearly vertical, not concave; interorbital space broader than the upper eyelid; tympanum more or less distinct, half the diameter of the eye. Fingers nearly two-thirds webbed; no projecting rudiment of pollex; toes nearly entirely webbed; disks nearly as large as the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granulate on the belly and under the thighs. Upper part of head and back yellowish or whitish; sides of head and body, and a large marking on upper surface, brown, the two colours sharply defined; this brown marking represents generally a hourglass-shaped figure, which may be prolonged posteriorly into two branches confluent with the brown of the sides, thus enclosing an oval light space on the pelvic region. In one specimen (*a*) the brown mark is spotted with white; in another (*h*) it is reduced to a triangular isoscelous spot on the head and nape; another specimen (*b*) lacks entirely the brown marking, and the upper surfaces are uniform whitish; specimens *i* and *k* show the reverse, the brown covering the upper surfaces, the white being reduced to a triangular spot on the forehead, a spot on scapular

region, another, very small, on end of coccyx, and a few spots across the limbs. The arms are brown, generally white-spotted; the tibiæ are white and brown; the thighs not coloured; the lower surfaces immaculate. From snout to vent 38 millim.

S. America.

a, *b*. Hgr.	Panama.	
c–*e*. ♀.	Surinam.	
f. ♀.	Cayenne.	
g. ♀.	Brazil.	Dr. Gardiner [C.].
h–*i*. ♀.	Sarayacu, Ecuador.	Mr. Buckley [C.].
k. ♀.	Paitanga, Ecuador.	Mr. Buckley [C.].
l. Hgr.	——?	Dr. A. Günther [P.]. (Type of *Hyla triangulum*.)

73. Hyla aurantiaca.

Hyla aurantiaca, *Günth. Cat.* p. 106.
Hyla aurantiaca, *Dau l. Rain.* p. 28, pl. 9. f. 3, *and Rept.* viii. p. 57; *Dum. & Bibr.* p. 610; *Burmeist. Erläuter.* p. 105; *Peters, Mon. Berl. Ac.* 1871, p. 404, & 1872, p. 683.
—— lactea, *Daud. Rain.* p. 30, pl. 10. f. 2, *and Rept.* viii. p. 62.
Calamita aurantiacus, *Merr. Tent.* p. 172.
—— lacteus, *Merr. l. c.*
Dendrohyas rubra, *Tschudi, Batr.* p. 74.
Sphænorhynchus lacteus, *Tschudi, l. c.* p. 71.
Dryomelictes aurantiacus, *Cope, Proc. Ac. Philad.* 1865, p. 194.
Scytopis aurantiacus, *Cope, ibid.* 1874, p. 123.

Tongue circular, entire and free behind. Vomerine teeth in two short straight series a little behind the level of the choanæ. Head small; snout pointed, projecting a good deal beyond the mouth-opening, once and a half as long as the diameter of the eye; canthus rostralis angular; loreal region vertical; eyes not very prominent; interorbital space much broader than the upper eyelid; tympanum moderately distinct, about half the diameter of the eye. Fingers two-thirds webbed; no projecting rudiment of pollex; toes entirely webbed; disks as large as the tympanum; subarticular tubercles moderate; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the eye. Skin smooth or minutely granulate above; belly and lower surface of thighs granulate; a strong fold across the chest; a short cutaneous flap on each side of the vent; a distinct fold along the outer edge of the tarsus. Uniform yellowish or pinkish; a reddish-brown streak along the canthus rostralis. From snout to vent 43 millim.

Guianas; Brazil.

a. ♀.	Demerara.	Sir W. Holmes [P.].
b–*c*. ♀.	British Guiana.	Mr. Leadbeater [C.].
d. ♀.	Pebas.	H. W. Bates, Esq. [C.].

m. ♀ Porto Real, Prov. Rio Janeiro. Hardy
n-o ♂♀ " "

e. ♀ Yarimaguas. Hahnel.
-k. ♂ 1/99. Lages, Sta Catharina. Michaelis
♂ R. Capivari, Parana. "

c. ♂ Palmeira, Parana. Trillo
d-f. ♂♀ Theresopolis Göldi

Hyla nana Blgr.

a-b. ♂♀. Colon. Resistencia. Spegazzini. (Syn
c-g. ♂♀ Rio Grande do Sul. Ihering.
i-l. ♂♀ Asuncion, Paraguay. Bohls.

74. Hyla bipunctata.

Hyla capistrata, *Günth. Cat.* p. 106.
Hyla bipunctata, *Spix, Spec. Nov. Test. Ran.* p. 36, pl. 9. f. 3; *Peters, Mon. Berl. Ac.* 1872, p. 213.
Scinax bipunctata, *Wagl. Syst. Amph.* p. 201.
Hyla capistrata, *Reuss, Mus. Senckenb.* i. p. 58, pl. 3. f. 4.
—— pumila, *Dum. & Bibr.* p. 565.

Tongue circular, nicked and free behind. Vomerine teeth in two small groups between the choanæ. Head moderate, as long as broad; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region not concave; interorbital space broader than the upper eyelid; tympanum distinct, somewhat more than half the diameter of the eye. Fingers half webbed; no projecting rudiment of pollex; toes nearly entirely webbed; subarticular tubercles rather indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or a little beyond. Skin smooth, granulate on the belly and under the thighs. Purplish red above, uniform or with symmetrical darker markings; sides of head dark purple, white-spotted; thighs not coloured; tibia with dark cross bars; beneath whitish, immaculate. Male with an external subgular vocal sac. From snout to vent 25 millim.

Brazil.

a, b. ♂ ♀. Brazil.

75. Hyla minuta.

Hyla minuta, *Peters, Mon. Berl. Ac.* 1872, p. 680.

Very closely allied to *H. bipunctata*, but the snout is a little longer and more depressed, and the coloration is different. Yellowish or olive-brown above; generally a hourglass-shaped dark marking beginning between the eyes, followed by a cross band on the sacrum; the hourglass-shaped marking may be broken up into two triangular spots; tibiæ cross-barred; these markings generally with a narrow light margin. Male with an external gular vocal sac. From snout to vent 20 millim.

Brazil.

a–b. ♂ ♀. Brazil. Lord Stuart [P.].

76. Hyla rhodopepla.

Hyla rhodopepla, *Günth. Cat.* p. 112, pl. vii. f. E.

Tongue circular, slightly nicked and slightly free behind. Vomerine teeth in two small groups between the choanæ. Head moderate, broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis indistinct; loreal region not concave; interorbital space broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the

eye. Fingers one-third webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles rather indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin smooth, granulate on the belly and under the thighs. Rose-coloured above, the back scarcely dotted with violet; a purplish-brown band round the snout through the eye along the sides to the loin; upper arm and thigh not coloured; beneath whitish, immaculate. From snout to vent 27 millim.

Ecuador.

a. Hgr.? Andes of Ecuador. Mr. Fraser [C.]. (Type.)

77. Hyla strigilata.

Hyla strigilata, *Spix, Spec. Nov. Test. Ran.* p. 38, pl. 10. f. 3; *Peters, Mon. Berl. Ac.* 1872, pp. 214 & 680.

Tongue subcircular, openly emarginate and very slightly free behind. Vomerine teeth in two small transverse groups between the choanæ. Head as long as broad; snout prominent, longer than the diameter of the eye; loreal region slightly concave; tympanum distinct, one third the diameter of the eye. Outer fingers one-fourth webbed; toes half webbed; disks and subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Upper surfaces slightly tubercular; belly and lower surface of thighs granulate. Upper surfaces brown-spotted; limbs cross-barred; loins blackish, light-spotted; beneath, marbled with brown. From snout to vent 42 millim.

Brazil.

78. Hyla peronii.

Hyla peronii, *Günth. Cat.* p. 112.
Dendrohyas peronii, (*Bibr.*) *Tschudi, Batr.* p. 75.
Hyla peronii, *Dum. & Bibr.* p. 569; *Günth. Proc. Zool. Soc.* 1863, p. 250, pl. 30. f. A & B; *Steindachn. Novara, Amph.* p. 60; *Keferst. Arch. f. Naturg.* 1868, p. 282, pl. 8. f. 30 & 31.

Tongue subcircular or suboval, free and slightly nicked behind. Vomerine teeth in two transverse groups between the choanæ. Head moderate, a little broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis rounded; loreal region oblique, slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers half webbed, or nearly so; no distinct rudiment of pollex; toes nearly entirely webbed; disks large, those of the fingers somewhat more than half the diameter of the eye; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout

p-q. ♀ Pt Mackay, Queensland. Ling Roth
(As typical of H. rothii. D'Vis)
r. Hgr. Guntawang, nr. Mudgee, N. S. W.
J Fletcher

b-d. Hgr. Leges, Sta Catharina Michaëlis
e-h. ♀ Porto Real, Rio Janeiro. Haidy.

or between that point and the eye. Upper surfaces more or less tuberculate, sometimes nearly smooth; a fold from the eye to the shoulder; lower surfaces granulate; a strong fold across the chest. Brown or olive above, more or less distinctly dotted or marbled with darker; groin and sides of thighs, sometimes also axilla, black- and yellow-marbled; sometimes a rather indistinct light vertebral line; beneath whitish, the throat frequently variegated with brown. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 57 millim.

Northern and Eastern Australia; Tasmania.

a. ♀.	Port Essington.	Earl of Derby [P.].
b, *c*. ♂ & hgr.	N.E. Australia.	
d. ♀.	Rockhampton.	Herr Dämel [C.].
e. ♀.	Rockhampton.	Godeffroy Mus.
f–*g*. ♂ ♀.	Sydney.	G. Krefft, Esq. [P.].
h–*i*. Hgr. & yg.	Sydney.	
k. ♀.	Long Bay, near Sydney.	J. Brazier, Esq. [P.].
l. ♀.	Clarence River.	G. Krefft, Esq. [P.].
m–*n*. Several spec., ♂ ♀.	New South Wales.	G. Krefft, Esq. [P.].
o. ♀.	Tasmania.	Sir A. Smith [P.].

79. Hyla senicula.

Hyla marmorata, *Burmeist, Erläuter.* p. 93, pl. 31. f. 1.
—— senicula, *Cope, Proc. Ac. Philad.* 1868, p. 111.
—— vermiculata, *Peters, Mon. Berl. Ac.* 1872, p. 211.

Tongue subcircular, slightly nicked and a little free behind. Vomerine teeth in two groups between the choanæ. Head broader than long; snout rounded, a little longer than the diameter of the orbit; canthus rostralis indistinct; interorbital space broader than the upper eyelid; tympanum very distinct, about half the diameter of the eye. Fingers three-fourths webbed; no projecting rudiment of pollex; toes entirely webbed; disks about as large as the tympanum; subarticular tubercles rather indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin nearly smooth above, granulate beneath; a denticulated fringe along the outer edge of the forearm and tarsus. Brownish above, with insuliform dark spots; beneath whitish, immaculate. From snout to vent 37 millim.

Brazil.

a. ♀.	Brazil.	Lord Stuart [P.]

80. Hyla marmorata.

Seba, i. 17. 4–5.
Bufo marmoratus, *Laur. Syn. Rept.* p. 29.
Hyla marmorata, *Daud. Rain.* p. 54, pl. 12, *and Rept.* viii. p. 71; *Dum. & Bibr.* p. 571; *Guichen. in Casteln. Anim. nouv. ou rares,*

Rept. p. 85; *Cope, Proc. Ac. Philad.* 1868, p. 111; *Peters, Mon. Berl. Ac.* 1871, p. 403.
Calamita marmoratus, *Merr. Tent.* p. 174.
Lophopus marmoratus, *Tschudi, Batr.* p. 73.

Tongue circular, free and slightly nicked behind. Vomerine teeth forming a straight, transverse, interrupted series on a level with the hinder edge of the choanæ. Head broader than long; snout very short, scarcely longer than the diameter of the orbit, rounded; canthus rostralis absent; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers webbed to the disks, which are as large as the tympanum; no projecting rudiment of pollex; toes rather short, webbed to the disks; latter a little smaller than those of fingers; subarticular tubercles very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or a little beyond. Upper surfaces slightly warty; belly and lower surface of thighs granulate; a denticulated fringe along the outer side of forearm and tarsus. Reddish brown above, marbled with dark brown; hind limbs with dark cross bars; lower surfaces bright saffron, covered with small round black spots; lower surface of forearm, fingers, tibia, tarsus, and toes black; web black and saffron. Male with an internal subgular vocal sac. From snout to vent 52 millim.

S. America.

a–b. ♂ ♀.	Ecuador.	Mr. Buckley [C.].
c. ♀.	Paitanga.	Mr. Buckley [C.].
d. ♂.	Canelos.	Mr. Buckley [C.].

81. Hyla dasynotus.

Hyla dasynotus, *Günth. Proc. Zool. Soc.* 1868, p. 488, pl. 38. f. 2.

Tongue subcircular, nicked and slightly free behind. Vomerine teeth in two small groups between the choanæ, which are very small. Head small, as long as broad; snout short, as long as the diameter of the orbit, rounded; canthus rostralis indistinct; loreal region very oblique, slightly concave; interorbital space as broad as the upper eyelid; tympanum rather indistinct, half the diameter of the eye. Fingers half webbed; no projecting rudiment of pollex; toes nearly entirely webbed; disks as large as the tympanum; subarticular tubercles small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. The skin, from the fronto-parietals along the spine to the sacrum, immovable and rough with bony deposits; lower surfaces granulate; an indistinct fringe along the outer edge of the forearm and tarsus. Brownish above, the rough parts of a darker colour; sides of the abdomen marbled with black and white; a black streak along the canthus rostralis and above the tympanum; a black spot anteriorly below the eye; a dark cross band between the eyes; femur deep black, with white ovate spots or cross bars; fore limbs and

e. ♀ Yarinaguas Hahnel.

b. ♀ Yarimaguas Hahnel.

lower legs with brown cross bands; lower parts whitish, throat brown. Male with two large external vocal sacs, one on each side of the throat. From snout to vent 32 millim.

Brazil.

a. ♂. Brazil. Dr. A. Günther [P.]. (Type.)

82. **Hyla parviceps.** (PLATE XXV. fig. 3.)

Tongue circular, nicked and free behind. Vomerine teeth in two transverse groups just behind the level of the choanæ. Head very small, a little broader than long; snout as long as the diameter of the eye, elevated, vertically truncate; canthus rostralis distinct; loreal region nearly vertical; eye large; interorbital space broader than the upper eyelid; tympanum distinct, one third the diameter of the eye. Three outer fingers one-third webbed; no projecting rudiment of pollex; toes nearly entirely webbed; disks as large as the tympanum; subarticular tubercles very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth, indistinctly granulate on the belly. Olive-brown above, turning to reddish on the back, with darker markings, viz. a broad streak along the canthus rostralis, a vase-shaped marking on the back of the head and nape (the anterior border between the eyes), and two oblique streaks on sacral region; limbs and sides blackish, with large white spots; a large white space on throat and front part of belly white, the remaining parts blackish. From snout to vent 26 millim.

Ecuador.

a. ♀. Sarayacu. Mr. Buckley [C.].

83. **Hyla sordida.**

Hyla sordida, *Peters, Mon. Berl. Ac.* 1863, p. 460.

Tongue round, openly emarginate behind. Vomerine teeth in two small transverse series in the middle between the choanæ. Snout rounded, as long as the diameter of the eye; canthus rostralis rounded; tympanum one third the diameter of the eye. Three outer fingers about two-thirds webbed; toes nearly entirely webbed; disks well developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin smooth above, granulate beneath. Bluish grey above, when seen with a magnifier finely punctate; the sides of the body and the hinder side of the thighs finely white- and brown-marbled; limbs cross-barred; beneath white. Male with a subgular vocal sac. From snout to vent 34 millim.

Veragua.

84. Hyla nigripes.

Hyla nigripes, *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 104, pl. 23. f. 7.

Tongue subcircular, openly emarginate and slightly free behind. Vomerine teeth in two short transverse series between the choanæ. Head moderate, as long as broad; snout rounded, slightly longer than the diameter of the orbit; canthus rostralis distinct; loreal region oblique, slightly concave; interorbital space slightly broader than the upper eyelid; tympanum distinct, nearly half the diameter of the eye. Three outer fingers nearly half webbed; no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles little developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath. Dark olive-brown above; sides of body finely black- and white-marbled; greyish beneath. From snout to vent 30 millim.

Costa Rica.

a. ♀. Costa Rica.

85. Hyla palliata.

Hyla palliata, *Cope, Proc. Ac. Philad.* 1863, p. 47.

Tongue oval, nicked. Vomerine teeth in a short uninterrupted series behind the posterior margin of the choanæ. Snout prominent, truncate; loreal region not concave; the distance from the nostril to the orbit equals the diameter of the latter, and is less than the width of the interorbital space; tympanum one sixth the size of the eye. Three outer fingers one-third webbed; a distinct rudiment of pollex; toes webbed to penultimate phalange. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the middle of the orbit. Skin smooth above, not granulated in the gular region. Extremities, lower surfaces, loreal and labial regions greyish brown; upper surface of head and body pale ochreous, abruptly separated from the other colour all round. Male with a vocal sac. From snout to vent 19 millim.

Paraguay.

86. Hyla polytænia.

Hyla rubicundula, (*non Reinh. & Lütk.*) *Günth. Proc. Zool. Soc.* 1868, p. 489, pl. 40. f. 3.
—— polytænia, *Cope, Proc. Amer. Philos. Soc.* 1869, p. 164.
—— striata, *Peters, Mon. Berl. Ac.* 1872, p. 681.

Tongue subcircular, entire, scarcely free behind. Vomerine teeth in two small groups behind the level of the choanæ. Head moderate, a little broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis angular; loreal region not very oblique, concave; interorbital space broader than the upper eyelid; tympanum distinct, one third the diameter of the eye.

Hyla bivittata Blgr.

a-f. ♀♀♂♂. Lages, Sta Catharina. Michaëlis.

g. ♂ Theresopolis, Sta. Catharina. Fruhstorfer (Types).

c, d-e. ♂♀ Theresopolis. Göldi

Hyla marginata, Blgr.

a. Agv. Lages, Sta Catharina. Michaëlis.

b-e ♂♀ ygg. Sta Catharina.

f. ♀ Mundo novo, R. Grande do Sul. Bischoff (Type)

b-e. ♀+yg. Rio Grande do Sul. Ihering.

Three outer fingers nearly one-third webbed; a distinct rudiment of pollex; toes half webbed; disks as large as the tympanum; subarticular tubercles little developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granulate on the belly and under the thighs; heel with a short dermal appendage. Light olive, with numerous parallel brown longitudinal bands on the body and limbs; these bands proceed from the snout, are unequal in width, and more or less distinctly edged with white; the broader of the bands are sometimes broken up in series of ovate spots; a blackish band, edged with white above and below, and longitudinally traversed by another white band, from the nostril to the loin. Male with an internal subgular vocal sac. From snout to vent 31 millim.

Brazil.

a–b. ♂. Brazil. Dr. Gardiner.

87. Hyla rubicundula.

Hyla rubicundula, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 197; *Cope, Proc. Amer. Philos. Soc.* 1869, p. 164; *Peters, Mon. Berl. Ac.* 1872, p. 681.

Differs from the preceding chiefly in having a shorter snout and a much smaller tympanum. Pinkish red above; a dark lateral band; thighs not coloured. From snout to vent 21 millim.

Lagoa Santa, Brazil.

88. Hyla ~~bracteator.~~ guentheri, Blgr.

Hyla bracteator, *Hensel, Arch. f. Naturg.* 1867, p. 159; *Peters, Mon. Berl. Ac.* 1872, p. 681. = *H. pulchella*

—— leucotænia, *Günth. Proc. Zool. Soc.* 1868, p. 489, pl. 40. f. 4.

Tongue a short oval, not distinctly nicked, and slightly free behind. Vomerine teeth in two small rounded groups, slightly beyond the level of the choanæ. Head moderate, scarcely broader than long; snout rounded, a little longer than the diameter of the orbit; canthus rostralis angular; loreal region not very oblique; interorbital space a little broader than the upper eyelid; tympanum moderately distinct, nearly half the diameter of the eye. Fingers webbed at the base; a distinct rudiment of pollex, forming an acute claw in the male; toes half webbed; disks a little smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth, granulate on the belly and under the thighs. Light greyish olive above; a white, inferiorly dark-edged line along the canthus rostralis, through the eye and the side of the body; another white line along the outer edge of the tibia; beneath immaculate. Male with a large external gular vocal sac. From snout to vent 38 millim.

Southern Brazil.

a. ♂. Rio Grande. (Type of *H. leucotænia*.)

89. Hyla guatemalensis.

Plectrohyla guatemalensis, *Brocchi, Bull. Soc. Philom.* (7) i. p. 92.
Cauphias guatemalensis, *Brocchi, ibid.* p. 129.

Tongue round, entire, free behind. Vomerine teeth in two small groups between the choanæ. Snout rounded; canthus rostralis distinct; loreal region very high, concave; tympanum hidden. A rudiment of web between the three outer fingers; a much developed, claw-like rudiment of pollex; toes entirely webbed; disks well developed. Sides with glandular folds; beneath granulate; a fold across the chest. Grey above, with rounded markings on the back; limbs marbled with green; yellowish white beneath. From snout to vent 59 millim.

Guatemala.

90. Hyla crassa.

Cauphias crassus, *Brocchi, Bull. Soc. Philom.* (7) i. p. 130.

Tongue subcircular, nicked and slightly free behind. Vomerine teeth in two groups between the choanæ. Head short and thick; snout rounded; canthus rostralis short, rounded; loreal region much elevated, a little concave; tympanum hidden. Fingers free; no projecting rudiment of pollex; toes entirely webbed. Skin of upper surfaces shagreened; lower surfaces granulate; a fold from the eye to the shoulder; a fold across the chest. Grey above; flanks and limbs marbled. Male with a vocal sac. From snout to vent 66 millim.

Mexico.

91. Hyla plicata.

Hyla plicata, *Brocchi, Bull. Soc. Philom.* (7) i. p. 126.

Tongue oval, nicked and free behind. Vomerine teeth on a level with the front edge of the choanæ. Head much depressed, broader than long; snout rounded; canthus rostralis angular; eyes very large; tympanum distinct, one third the diameter of the eye. Fingers free, a rudiment of web between the first and second (!); toes half webbed; disks small, not half the diameter of the tympanum. Skin smooth above, granulate beneath; a fold from the eye along the side; a strong fold across the chest. Green above, back and limbs spotted. From snout to vent 44 millim.

Mexico.

92. Hyla spinosa.

Hyla spinosa, *Steindachn. Verh. zool.-bot. Ges. Wien*, 1864, p. 239, pl. 9. f. 1, *and Novara, Amph.* p. 62.

Tongue subcircular, slightly emarginate behind, adherent. Vomerine teeth between the choanæ, in two small groups slightly convergent backwards. Head short and broad; snout vertically truncate; canthus rostralis obtuse; loreal region slightly concave; tympanum very distinct, not much smaller than the eye; a strong and narrow glandular prominence from the eye to the shoulder, over

the tympanum, pierced by two pointed bony spines. Fingers free; toes webbed at the base; disks much smaller than the tympanum. Hind limb once and a half the length of head and body. Skin of back and sides thick and finely wrinkled; belly and lower surface of thighs granulate. Green above; sides of head and body with large confluent violet spots; limbs crossed-barred with violet; reddish brown beneath. From snout to vent 39 millim.

Brazil?

93. Hyla nebulosa.

Hyla luteola, *Günth. Cat.* p. 107.
Hyla nebulosa, *Spix, Spec. Nov. Test. Ran.* p. 39, pl. 10. f. 4.
—— luteola, *Burmeist. Erläuter.* p. 107, pl. 31. f. 3; *Peters, Mon. Berl. Ac.* 1872, pp. 217 & 770.

Tongue circular, entire. Vomerine teeth in two groups between the choanæ. Head broader than long; snout rounded; loreal region slightly concave: tympanum much smaller than the eye. Fingers webbed at the base; toes half webbed; disks large. Skin smooth above, granulate on the belly and under the thighs. Yellow above, finely brown-punctate; sides of the belly and of the thighs with vertical purplish-blue bars; beneath whitish, with slight grey variegations. From snout to vent 48 millim.

Brazil.

94. Hyla labialis.

Hyla labialis, *Peters, Mon. Berl. Ac.* 1863, p. 463.

Tongue very broad, heart-shaped, openly emarginate. Vomerine teeth in two transverse series in the middle between the choanæ. Snout obtuse, as long as the diameter of the eye; canthus rostralis distinct; tympanum hardly distinct, two fifths the diameter of the eye. Fingers webbed at the base; toes nearly entirely webbed; disks moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth above, granulate beneath. Olive-brown above, changing to olive-green on the sides; a blackish-brown band from the tip of the snout through the eye to the middle of the side; the lips have a very narrow brown margin; sides of the thighs reticulated with brown; belly yellow; throat ochraceous. Male with a subgular vocal sac. From snout to vent 34 millim.

Bogotá.

95. Hyla auraria.

Hyla auraria, *Peters, Mon. Berl. Ac.* 1873, p. 615.

Tongue openly emarginate. Vomerine teeth in two transverse series on a level with the hinder edge of the choanæ. Snout as long as the diameter of the eye; canthus rostralis rounded; loreal region oblique; tympanum vertically oval, its greatest diameter two thirds that of the eye. Three outer fingers webbed at the base;

toes three-fourths webbed; disks of fingers rather large. Skin smooth, belly and lower surface of thighs granulate. Greenish yellow above; a straightly defined dark spot beginning between the eyes, evanescent on the back; limbs with irregular dark cross bands; beneath dirty yellow. From snout to vent 30 millim.

S. America.

96. Hyla squirella.

Hyla squirella, *Günth. Cat.* p. 111.

Hyla squirella, *Daud. Rain.* p. 18, pl. 3. f. 2, *and Rept.* viii. p. 34; *Leconte, Ann. Lyc. N. York*, i. p. 279; *Harl. Journ. Ac. Philad.* v. p. 342; *Holbr. N.-Amer. Herp.* iv. pl. 30; *Dekay, New York Fauna, Rept.* p. 72, pl. 21. f. 53; *Leconte, Proc. Ac. Philad.* 1855, p. 429.

Calamita squirella, *Merr. Tent.* p. 171.

Auletris squirella, *Wagl. Syst. Amph.* p. 201.

Hyla squirella, *Dum. & Bibr.* p. 589.

Tongue circular, slightly nicked and free behind. Vomerine teeth in two small groups between the choanæ. Head moderate, a little broader than long; snout rounded, a little longer than the diameter of the eye; canthus rostralis distinct, loreal region slightly concave; interorbital space a little broader than the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers very slightly webbed at the base; no prominent rudiment of pollex; toes half webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Skin smooth above, granulate beneath; a strong fold across the chest. Olive above, spotted with darker; limbs cross-barred; upper lip white; beneath immaculate. From snout to vent 39 millim.

S.E. United States.

a. ♀. Georgia.

97. Hyla femoralis.

Hyla femoralis, *Daud. Rain.* p. 18, pl. 3. f. 1, *and Rept.* viii. p. 32; *Leconte, Ann. Lyc. N. York*, i. p. 280; *Harl. Journ. Ac. Philad.* v. p. 342; *Holbr. N.-Amer. Herp.* iv. pl. 31; *Leconte, Proc. Ac. Philad.* 1855, p. 428.

Calamita femoralis, *Merr. Tent.* p. 171.

Auletris femoralis, *Wagl. Syst. Amph.* p. 201.

Hyla squirella, part., *Dum. & Bibr.* p. 589.

Appears to be specifically distinct from *H. squirella*. The web between the fingers is more distinct, the hind limbs are rather shorter, the coloration is different, and the size is smaller. Upper lip not white-edged; hinder side of thighs blackish, white-spotted. From snout to vent 29 millim.

S.E. United States.

a–d. ♂ & hgr. N. America. E. Doubleday, Esq. [P.].

b. ♀ Dead Man's Marsh, Ontario.

c. ♂ Raleigh, N. Carolina. Indian Trees. Brimley.

98. Hyla pickeringii.

Acris pickeringii, *Günth. Cat.* p. 71.
Hylodes pickeringii, *Holbr. N.-Amer. Herp.* iv. p. 135, pl. 34.
Hyla pickeringii, *Leconte, Proc. Ac. Philad.* vii. 1854, p. 429.

Tongue heart-shaped, free behind. Vomerine teeth in two small groups just behind the level of the choanæ. Head moderate, as long as broad; snout subacuminate, once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region slightly concave; interorbital space broader than the upper eyelid; tympanum small, hardly visible. Fingers free; no projecting rudiment of pollex; toes not quite half webbed; disks and subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth or minutely tuberculate above, granulate beneath. Greyish above, dotted with darker, and with angular symmetrical lines; a dark streak from the tip of the snout through the eye to the middle of the side; tibiæ cross-barred; beneath whitish, immaculate. Male with an internal subgular vocal sac. From snout to vent 17 millim.

United States (Eastern Region).

a. ♂. N. America.

99. Hyla curta.

Hyla curta, *Cope, Proc. Ac. Philad.* 1866, p. 313.

Tongue free behind. Vomerine teeth in two groups between the choanæ. Snout projecting; canthus rostralis well defined, straight; loreal region not concave; tympanum one third the diameter of the eye. Fingers and toes stout, the former free, the latter half webbed; disks well defined. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the anterior margin of the orbit. Skin smooth or sparsely and finely tuberculate above. Above ashy brown, with a dark interocular triangle and a broad dorso-lateral band on each side, often broken into elongate spots; limbs punctulate and cross-barred. Male without vocal sac. From snout to vent 95 millim.

Cape St. Lucas, Lower California.

100. Hyla elæochroa.

Hyla elæochroa, *Cope, Journ. Ac. Philad.* (n. s.) viii. p. 105, pl. 26. f. 3.

Tongue longer than wide. Vomerine teeth between the choanæ, in two short series directed backwards towards the median line. Snout elongate and plane above, and slightly projecting. Eye large, four or five times the area of the membranum tympani. Fingers entirely free; toes two-thirds webbed; disks large. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Colour above and below a uniform

olivaceous, without spots; a pale area below the eye; lip faintly marbled. From snout to vent 26 millim.

Costa Rica.

101. Hyla miotympanum.

Hyla miotympanum, *Cope, Proc. Ac. Philad.* 1863, p. 47; *Peters, Mon. Berl. Ac.* 1871, p. 651.

—— microtis, *Peters, Mon. Berl. Ac.* 1869, p. 880.

Tongue slightly emarginate. Vomerine teeth in two elongate slightly oblique fasciculi between the choanæ, converging posteriorly. Snout broadly rounded; canthus rostralis short; loreal region oblique; tympanum extremely small, scarcely distinct. Outer fingers one-fourth, toes extensively webbed; disks larger than the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin smooth above, granulate beneath. Purplish ash above, with or without a few lighter specks and indistinct darker reticulations; extremities paler, not barred; a light border from heel to toes, another bounding superiorly a subanal spot; superior labial border and lateral stripe bright yellow, the latter sometimes not well separated from the abdominal shade; lower surfaces yellowish. From snout to vent 37 millim.

Jalapa, Mexico.

102. Hyla gracilipes.

Hyla gracilipes, *Cope, Proc. Ac. Philad.* 1865, p. 194.

Tongue elongate, free behind. Vomerine teeth in two small groups between the choanæ. Head flat, longer than broad; canthus rostralis little concave; eyes little prominent, one half tympanic disk. Fingers elongate, free; toes webbed at base only, remarkably elongate; the foot from tarsus a little longer than the tibia, and equalling, from axilla to middle of origin of femur, the width of the head. Colour above bright leek-green, with a brown band from the nostril through the tympanum to the middle of the side, white-bordered above, and a short band on each side of the ilium, white-bordered; femora not spotted behind; limbs not cross-banded; upper lip with a brown border; beneath whitish. From snout to vent 15 lines.

Mexican tableland, N.E. of city of Mexico.

103. Hyla staufferi.

Hyla staufferi, *Cope, Proc. Ac. Philad.* 1865, p. 195.

Tongue rounded, a border only free. Vomerine teeth in fasciculi between choanæ. Head plane, depressed: snout very prominent, rounded: canthus rostralis weak, straight; lores flat, oblique. Fingers and toes short, the former free, the latter half webbed; disks large. The hind limb being carried forwards along the body,

a-b. ♂. Mexico. Copenhagen Mus.

Hyla prosoblepon. Bttg.
b. ♂♀ Belvedere, Costa Rica. Senckenb. Mus.

a Hgr. Guatemala. Godman

the tibio-tarsal articulation reaches the front of the orbit. Skin smooth above, sides rugulose. Dark olive above, with a short longitudinal black bar over each scapula, and one from eye to eye, with a trace along the coccyx; below yellowish. Male with a large gular vocal sac. From snout to vent 28 millim.

Mexico.

104. Hyla punctariola.

Hyla punctariola, *Peters, Mon. Berl. Ac.* 1863, p. 462; *Cope, Journ. Ac. Philad.* (n. s.) viii. 1876, p. 106.

Tongue heart-shaped, openly emarginate. Vomerine teeth in two small groups behind the level of the choanæ. Snout slightly longer than the diameter of the eye; tympanum somewhat more than one third the diameter of the eye. Fingers quite free; toes three-fourths webbed; disks moderate. The hind limb being carried forwards along the body, two thirds of the tarsus extend beyond the tip of the snout. Skin smooth. Brown above; a cross band between the eyes and a large spot on the snout; upper lip with whitish bars alternating with brown ones; limbs cross-barred with dark brown; fingers and toes cross-barred with brown and white; beneath dirty white; the throat brown, dotted with white. From snout to vent 22 millim.

Veragua.

Mr. Cope, *l. c.*, distinguishes three varieties of coloration, which he describes as "subspecies," suspecting, however, that they may be true species. These are named *pictipes*, *maesta*, and *monticola*. All three from Costa Rica. Mr. Cope describes these Costa-Rican specimens as having a web at the base of the outer fingers, and the "heel extends nearly or quite to the end of the muzzle," thus differing widely from the original description by Prof. Peters.

105. Hyla bistincta.

Hyla bistincta, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 87.

Vomerine teeth in two small groups between the choanæ. Head, particularly the interorbital region, broad and flat; canthus rostralis distinct; tympanum exceedingly small, one fifth the diameter of the eye, overhung by a thick dermal fold. Fingers free; toes not fully webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Dark bluish plumbeous above, yellow beneath; sides marbled with the two colours; hinder side of thighs pale brown, with a few yellow specks along the superior border. Male with rugosities on the inner side of the first finger during the breeding-season. From snout to vent 45 millim.

Vera Cruz.

106. Hyla depressiceps. (Plate XXV. fig. 4.)

Tongue circular, entire, scarcely free behind. Vomerine teeth in two small transverse groups between the rather large choanæ. Head much depressed, as long as broad; snout rounded, once and a half as long as the diameter of the eye; canthus rostralis very indistinct; loreal region not concave; interorbital space a little broader than the upper eyelid; tympanum very distinct, half the diameter of the eye. Fingers webbed at the base; no projecting rudiment of pollex; toes three-fourths webbed; disks as large as the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth, granulate on the belly and under the thighs. Light brown above, dotted with dark brown and whitish; a streak along the canthus rostralis, a cross band between the eyes, and some large spots on the back dark brown; limbs black and whitish marbled; whitish beneath, immaculate. From snout to vent 40 millim.

Ecuador.

a b. ♀.	Ecuador.	Mr. Buckley [C.].

107. Hyla phæota.

Hyla phæota, *Cope, Proc. Ac. Philad.* 1862, p. 358.

Tongue round, entire. Vomerine teeth in two nearly transverse series between the large choanæ. Head broad, depressed; canthus rostralis rounded, concave; eye large, prominent, tympanum more than half its extent. Three outer fingers slightly webbed; nearly three phalanges of the fourth toe free, the web, however, margining its outer side. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin of upper surfaces entirely smooth; a strong fold from orbit over tympanum. Colour above greyish brown, shaded with a pale plumbeous tint; abdomen, upper jaw, postorbital region, and the borders of the upper eyelid, tarsus and antebrachium, and of a brown spot near the vent, white; a dark brown line on the canthus rostralis, and a band between the eye; a longitudinal band or series of spots on the back, which bifurcates anteriorly; a spot on the coccyx; a dark-brown band from angle of eye to scapular region, involving the whole of the tympanum; femur with narrow cross bands, posterior face reticulate or unicolor; tibiæ more broadly cross-banded; sides with brownish vermiculations; gular region brown-shaded. Male with a vocal sac. From snout to vent 1 in. 10 lines.

Turbo, Colombia.

108. Hyla spilomma.

Hyla spilomma, *Cope, Proc. Amer. Philos. Soc.* xvii. 1877, p. 86.

Tongue wide and entire. Vomerine teeth in transverse series

Hyla goeldii. Blgr.

a. b. ♂♀ Col. Alpina. Theresopolis. Goeldi (Typ.)
c. h. Larven. " " " "
i, k. ♂ + ♀ with eggs. " " " "

behind the level of the choanæ. Head broad, snout very short; canthus rostralis obsolete; tympanum two fifths the diameter of the eye. Fingers free; toes quite short, only about half webbed; disks nearly as large as the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the posterior portion of the orbit. Superior and lateral integument thickened, and studded on the back with rather large, obtuse warts. Light purplish brown, with or without a broad blackish band extending from above the tympanum to the groin, separating the darker dorsal region from the sides. From snout to vent 38 millim.

Vera Cruz.

109. Hyla acuminata.

Hyla acuminata, *Cope, Proc. Ac. Philad.* 1862, p. 354.
Scytopis acuminatus, *Cope, Proc. Ac. Philad.* 1874, p. 124.

Tongue subcircular or suboval, slightly nicked and scarcely free behind. Vomerine teeth in a straight series between the large choanæ. Head depressed, longer than broad; snout subacuminate, twice as long as the diameter of the eye; canthus rostralis indistinct; loreal region not concave; eye rather small; interorbital space broader than the upper eyelid; tympanum very distinct, a little more than half the diameter of the eye. Fingers free; no projecting rudiment of pollex; toes three-fourths webbed, first quite free; disks nearly as large as the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces tubercular, the tubercles most distinct on the head and the sides of the body; heel with a conical tubercle; lower surfaces granulate. Brown above, marbled with darker; limbs cross-barred; whitish beneath, throat and chest dotted with brown. From snout to vent 40 millim.

S. America.

a. ♀.	British Guiana.	
b. ♀.	Surinam.	Mr. Bartlett [C.].
c. ♀.	Santarem.	Mr. Wickham [C.].

110. Hyla rubra.

Hyla rubra, *Günth. Cat.* p. 110.
Hyla rubra, *Daud. Rain.* p. 26, pl. 9, *and Rept.* viii. p. 53; *Latr. Rept.* ii. p. 176; *Dum. & Bibr.* p. 592; *Burmeist. Erlautr.* p. 100; *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 196; *Steindachn. Novara, Amph.* p. 60; *Peters, Mon. Berl. Ac.* 1872, pp. 207 & 218.
Calamita ruber, *Merr. Tent.* p. 171.
Hyla lateristriga, *Spix, Spec. Nov. Test. Ran.* p. 32, pl. 6. f. 4.
—— cærulea, *Spix, l. c.* p. 37, pl. 10. f. 1.
—— x-signata, *Spix, l. c.* p. 40, pl. 11. f. 3.
Auletris rubra, *Wagl. Syst. Amph.* p. 201.
Hyla cyanocephala, *Dum. & Bibr.* p. 558; *Peters, Mon. Berl. Ac.* 1873, p. 613.

Hyla conirostris, *Peters, Mon. Berl. Ac.* 1863, p. 464.
? Scytopis allenii, *Cope, Proc. Amer. Philos. Soc.* 1869, p. 162.
Scytopis cryptanthus, *Cope, Proc. Ac. Philad.* 1874, p. 123.
Dendrohyas rubra, *Tschudi, Batr.* p. 74.
Scytopis x-signatus, *Cope, l. c.* p. 124.
—— ruber, *Cope, l. c.*

Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two small groups between the choanæ. Head rather depressed, as long as broad; snout rounded, once and a half or once and two thirds as long as the diameter of the eye; canthus rostralis very indistinct; loreal region not concave; interorbital space generally broader than the upper eyelid; tympanum very distinct, about half the diameter of the eye. Fingers free; no projecting rudiment of pollex; toes three-fourths webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the eye, or between the latter and the tip of the snout. Upper surfaces smooth, or covered with small tubercles; lower surfaces granulate; a strong fold across the chest. Coloration very variable. Brownish above, immaculate, or dotted, variegated, or longitudinally striped with darker; frequently a light streak along each side of the back, beginning from the eye, or two curved dark markings on the front of the back, forming an X the branches of which are separated; the sides of the thighs may be immaculate, or black- and white-marbled. The uniform thighs correspond generally with the streaks on the back (*Hyla rubra*), and the marbled thighs with the X-mark (*H. x-signata*), but this coincidence is not constant. Beneath whitish, immaculate. Male with an external subgular vocal vesicle. From snout to vent 46 millim.

S. America.

a, b, c–d. ♂, ♀, & hgr.	Surinam.	
e–f. ♀.	Demerara.	Capt. Friend [P.].
g–h. ♂ ♀.	Demerara.	Col. Sabine [P.].
i. Many spec.: ♀, hgr., & yg.	Bahia.	
k, l, m, n. ♂, ♀, & hgr.	Para.	
o–p. ♀.	Para.	R. Graham, Esq. [P.].
q. ♀.	Santarem.	H. W. Bates, Esq. [C.].
r–s. ♀.	Santarem.	H. A. Wickham, Esq. [C.].
t–v. ♀.	Sarayacu, Ecuador	Mr. Buckley [C.].
w, x. ♀.	Canelos, Ecuador.	Mr. Buckley [C.].
~~*y.* ♂.~~	~~Soriano, Uruguay.~~	~~—— Havers, Esq. [P.].~~ *H. nasica*
z–a. ♂ ♀.	Brazil.	H. W. Bates, Esq. [C.].
β. ♀.	S. America.	Mus. Guilding.
γ. Hgr.	S. America.	C. Darwin, Esq. [P.].

111. Hyla funerea.

Scytopis funereus, *Cope, Proc. Ac. Philad.* 1874, p. 123.

Vomerine teeth in short fasciculi between the choanæ. Head

8. Several larvæ. Pernambuco. Forbes.
ε. Hgr. Jaguara, Rio Grande do Sul. Hering.
ζ. Yg. Iguarassu, Pernambuco. Ramage.
η-ο. ♀ S. Lucia, W. Indies.
ι-κ ♂♀ Chapala Pass, Matto Grosso. Moore.
λ. ♀ Theresopolis Göldi

Hyla catharinæ, Blgr.

a-b. ♀ Sta Catharina. Michaëlis (Types)

c. ♀ Theresopolis Göldi

n-w. 1♀ Pt Mackay, Queensland. Long Roth.

w. ♀ Bogan R., Dandaloo, N.S.W. Fletcher

oval; snout narrowed, as long as the diameter of the eye; tympanum half the diameter of the eye. Fingers free; no projecting rudiment of pollex; longest toe webbed to base of penultimate phalange. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches considerably beyond the tip of the snout. Back with a very few scattered elevations; areolations of belly fine. Dark brown or blackish, with a broad black cross band between the eyes and several across arm, femur, tibia, and tarsus; femora uniform behind; a few black spots on posterior part of the side; throat and breast black-punctated. From snout to vent 44 millim.

Moyobamba, Peru.

112. Hyla rubella.

Hyla rubella, *Günth. Cat.* p. 111.

Hyla rubella, *Gray, Zool. Misc.* p. 57; *Keferst. Götting. Nachr.* 1867, p. 357, *and Arch. f. Naturg.* 1868, p. 283, pl. 8. f. 29.

Tongue large, oval, entire and free behind. Vomerine teeth in two groups close together behind the level of the choanæ. Head small, as long as broad; snout rounded, as long as the diameter of the eye; canthus rostralis obtuse; loreal region nearly vertical; interorbital space as broad as, or a little broader than, the upper eyelid; tympanum distinct, about half the diameter of the eye. Fingers and toes very variable in shape; in some specimens they are moderate, with rather small disks, in others short and stout and with very large dilations; but as some specimens exhibit an intermediate structure, it is impossible to attach a specific importance to this character, though, when the two extreme forms are placed side by side, the difference is a very striking one. Fingers free or with a slight rudiment of web; no distinct rudiment of pollex; toes two-thirds or three-fourths webbed; subarticular tubercles well developed; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the tympanum. Skin smooth above, granulate beneath; a strong fold across the chest. Greyish or reddish brown above, uniform or speckled with darker; a dark band on the side of the head and body; beneath whitish, immaculate. Male with a brown external subgular vocal sac; during the breeding-season the inner side of the first finger is covered with brown rugosities. From snout to vent 39 millim.

Australia.

a, *b–c*. ♀.	Port Essington.	Mr. Gould [C.]. (Types.)
d. ♀.	Nicol Bay.	M. Du Boulay [C.].
e–f, *g*. ♂.	N. Australia.	G. Krefft, Esq. [P.].
h–i. ♂.	Port Denison.	G. Krefft, Esq. [P.].
k–l. ♀.	Rockhampton.	Mus. Godeffroy.
m–p. ♀.	Peak Downs.	Mus. Godeffroy.
q. Hgr.	Abrolhos.	Dr. A. Günther [P.].

113. Hyla congenita.

Hyla (Litoria) congenita, *Peters & Doria, Ann. Mus. Civ. Gen.* xiii. 1878, p. 427, pl. 6. f. 4, 5.

Allied to *H. rubella*, but distinguished by a very distinct web between the fingers. Brown above, black-punctate, or with two irregular, more or less distinct, dark, longitudinal dorsal bands and a black lateral band. From snout to vent 36 millim.

New Guinea.

114. Hyla dentata.

Hyla dentata, *Keferst. Götting. Nachr.* 1868, p. 329, *and Arch. f. Naturg.* 1868, p. 130, pl. 8. f. 20 & 21.

Tongue subcircular, entire and free behind. Vomerine groups subcircular, behind the level of the choanæ, the teeth on each of them arranged in an arch the concavity of which is turned forwards. Head moderate, a little broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis distinct; loreal region slightly oblique; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers webbed at the base; no distinct rudiment of pollex; toes three-fourths webbed; disks of fingers quite as large as the tympanum, of toes smaller; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum, or not quite so far. Skin smooth, or slightly tuberculate above; belly and lower surface of thighs granulate; a strong fold across the chest. Brown or greyish olive above, minutely speckled with darker; a lighter zone on each side of the back; a dark streak extending along the canthus rostralis, through the eye, over the tympanum to beyond the shoulder; beneath whitish, immaculate. Male with a large brown, external subgular vocal sac. From snout to vent 48 millim.

Eastern Australia.

a–b. ♂ ♀.	Sydney.	G. Krefft, Esq. [P.].
c e f g. Hgr. & yg.	Sydney.	Mus. Godeffroy.

115. Hyla ewingii.

Hyla ewingii, *Günth. Cat.* p. 111.

Hyla ewingii, *Dum. & Bibr.* p. 597; *Jacq. & Guichen. Rept. in Voy. au Pôle Sud par Dumont d'Urville*, p. 26, pl. 1. f. 3; *Steindachn. Novara, Amph.* p. 62.

—— calliscelis, *Peters, Mon. Berl. Ac.* 1874, p. 620.

Tongue heart-shaped, free behind. Vomerine teeth in two small transverse or slightly oblique series between the choanæ. Head moderate, a little broader than long; snout rounded, as long as the diameter of the eye; canthus rostralis distinct; loreal region not or but very slightly concave; interorbital space as broad as, or a little

a-d. ♂♀ hyr. Kapa Kapa, nr. Port Moresby. Doria.

e. Hyr. Katow Doria

f. Yy. N. Guinea. Forbes

h. ♂ Illawarra, N. S. W. Fletcher

i. ♀ Gosford, " "

k. ♂ Illawarra, " "

s. ♂ (var. calliscelis). Sydney. Fletcher.
t-v. ♂♀ Barrawang, N. S. W. "
w-x. ♂♀ Lucknow, N. S. W. "
y. ♂ Ballarat, Victoria "

i-k. ♂♀ Barrawang, N. S. W. Fletcher.

broader than, the upper eyelid; tympanum distinct, half or three fifths the diameter of the eye. Fingers with a slight rudiment of web; no distinct rudiment of pollex; toes two-thirds webbed; disks smaller than the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum or the eye. Upper surfaces smooth or with small scattered tubercles; lower surfaces granulate; a fold above the tympanum. Brownish or greyish above; a dark streak on canthus rostralis and temporal region; below this, a whitish streak runs from below the eye to the shoulder; a large, well defined dark spot commences between the eyes and covers the middle of the back; besides, the head and back are often speckled all over with blackish; lower surfaces whitish, immaculate. Male with an external subgular vocal sac; during the breeding-season the inner side of the first finger is covered with blackish rugosities. From snout to vent 42 millim.

Australia.

a. ♀.	Tasmania.	Zoological Society [P.]. (One of the types.)
b–d, *e*. ♀ & hgr.	Tasmania.	R. Gunn, Esq. [P.].
f–i, *k*. ♂ ♀.	Hobart Town.	J. B. Jukes, Esq. [P.]
l. ♀.	Melbourne.	
m, *n–p*. ♂ ♀.	Australia.	

VAR. A (*H. calliscelis*, Peters). Hinder side of thighs with large purplish-black spots on yellowish ground; a purplish-black spot in the groin.

q–r. ♀.	King George's Sound.	G. Krefft, Esq. [P.].

116. Hyla krefftii.

Hyla krefftii, *Günth. Ann. & Mag. N. H.* (3) xi. 1863, p. 28, pl. 4. f. C, *and Proc. Zool. Soc.* 1863, p. 250, pl. 30. f. D; *Keferst. Götting. Nachr.* 1867, p. 357, *and Arch. f. Naturg.* 1868, p. 280.

Very closely allied to *H. ewingii*, but differing in the more distinct web between the fingers, and the more extensive web between the toes, it reaching the disks of the third and fifth. From snout to vent 47 millim.

Australia.

a. ♀.	Sydney.	G. Krefft, Esq. [C.]. (Type.)
b. ♀.	Sydney.	Zool. Soc.
c. ♀.	Randwick.	G. Krefft, Esq.
d–e. Hgr.	Port Denison.	G. Krefft, Esq.
f, *g*. ♂ ♀.	New Holland.	
h. ♀.	? Tasmania.	Dr. Milligan [P.].

117. Hyla parvidens.

Hyla parvidens, *Peters, Mon. Berl. Ac.* 1874, p. 620.

Distinguished from *H. ewingii* in having a smaller tympanum, the

diameter of which is one third that of the eye, and the vomerine teeth very slightly developed, hardly distinguishable. Yellowish above, immaculate, except a few small dark dots on the hind limbs; a black streak on canthus rostralis and temporal region. From snout to vent 33 millim.

Port Philip, Australia.

118. Hyla adelaidensis.

Hyla adelaidensis, *Günth. Cat.* p. 113.
Hyla adelaidensis, *Gray, in Grey's Journ. Exped. Austr.* p. 447, pl. 8. f. 2.
—— bioculata, *Gray, l. c.* f. 1.
—— schuetteri, *Keferst. Arch. f. Naturg.* 1868, p. 279, pl. 8. f. 27, 28.

Tongue suboval, slightly nicked and free behind. Vomerine teeth in two transverse or slightly oblique groups between the choanæ. Head a little longer than broad; snout subacuminate, rather prominent, the end sometimes regularly pointed; the distance between the eye and the nostril equals the diameter of the former; canthus rostralis angular, straight; loreal region nearly vertical; interorbital space a little broader than the upper eyelid; tympanum very distinct, about two thirds the diameter of the eye. Body elongate. Fingers with an indistinct rudiment of web; no distinct rudiment of pollex; toes three-fourths webbed; disks much smaller than the tympanum; subarticular tubercles moderate; a very distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Upper surfaces smooth, or with few small scattered tubercles; belly and lower surface of thighs granulate; a strong fold across the chest. Brown above, uniform, or spotted or marbled with darker; a dark streak from the nostril, through the eye, along each side of the body; below this, a white or pink streak extends from the eye to the middle of the side; hinder side of thighs dark brown, white-spotted, sometimes not coloured or with obsolete lighter spots. Male with an external subgular vocal sac. From snout to vent 47 millim.

Australia.

a. ♀.	W. Australia.	Mr. Gilbert. (Type.)
b h. ♀ & hgr.	W. Australia.	(Types of *H. bioculata*.)
i–m. Hgr. & larvæ.	W. Australia.	G. T. Moore, Esq. [P.].
n–o. ♀.	W. Australia.	Hr. Dämel [C.].
p–r, s–t, u–v, w. ♂ ♀.	Port Essington.	Dr. Fleming [P.].
x. ♀.	King George's Sound.	G. Krefft, Esq. [P.].

119. Hyla citropus.

Hyla citropus, *Günth. Cat.* p. 115.
Dendrohyas citropa, (*Peron & Lesueur*) *Tschudi, Batr.* p. 75.
Hyla citropa, *Dum. & Bibr.* p. 600.
—— citropus, *Keferst, Arch. f. Naturg.* 1868, p. 281, pl. 7. f. 22 & 23.

Tongue subcircular, nicked and free behind. Vomerine teeth in two oblique groups behind the level of the choanæ. Head moderate,

h. ♂ Mt Wilson. Fletcher.

a. ♀ Treasury I?
b-g. ♀ ♂ Ferguson I?; Brit. N. Guinea. Guppy. Meek.

broader than long; snout rounded, slightly longer than the diameter of the orbit; canthus rostralis distinct; loreal region nearly vertical, slightly concave; interorbital space a little broader than the upper eyelid; tympanum distinct, about half the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes half webbed; disks smaller than the tympanum; subarticular tubercles well developed; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth or minutely tubercular above, granulate beneath; a curved fold from the eye to the shoulder. Uniform purplish above; a blackish streak along the canthus rostralis; a blackish, above light-edged, streak along the side of the body; beneath whitish, immaculate. From snout to vent 58 millim.

Eastern Australia.

a–c, *d–e*. ♀ & yg.	N. S. Wales.	G. Krefft, Esq. [C.].
f. Hgr.	Sydney.	G. Krefft, Esq. [C.].
g. ♀.	Errumanga?	

120. Hyla thesaurensis.

Hyla thesaurensis, *Peters, Mon. Berl. Ac.* 1877, p. 421.

Tongue small, heart-shaped. Vomerine teeth in two small transverse groups between the choanæ. Snout rounded, as long as the eye; canthus rostralis rounded; loreal region concave; tympanum half the diameter of the eye. Fingers free; toes half webbed. Belly and lower surface of thighs granulate. Olive-brown above; a white vertebral line, beginning on the tip of the snout, another along each side of the back, beginning from the eye and passing above the tympanum; a streak between the eyes and another from the loreal region to below the tympanum, also white; belly and lower surface of thighs yellowish. From snout to vent 28 millim.

Solomon Islands.

121. Hyla impura.

Hyla impura, *Peters & Doria, Ann. Mus. Civ. Genov.* xiii. 1878, p. 426, pl. 7. f. 2.

Tongue cordiform. Vomerine teeth in two transverse groups between the choanæ. Snout a little longer than the diameter of the eye; canthus rostralis distinct; tympanum half the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes somewhat more than half webbed; disks moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth above, granulate beneath; a very distinct fold across the chest. Olive-green above, lighter beneath; hinder side of thighs black, white-punctate. From snout to vent 42 millim.

New Guinea.

122. Hyla vagabunda.

Hyla vagabunda, *Peters & Doria, Ann. Mus. Civ. Genov.* xiii. 1878, p. 424, pl. 6. f. 3.

Tongue large, cordiform. Vomerine teeth in two transverse groups between the choanæ. Snout rounded, scarcely longer than the diameter of the eye; canthus rostralis rounded; tympanum half the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes somewhat more than half webbed; disks moderate. Skin smooth above; belly and lower surface of thighs granulate; a very distinct fold across the chest. Blue above; a whitish line from the tip of the snout, through the eye, to the shoulder; whitish beneath. From snout to vent 37 millim.

New Guinea.

123. Hyla arfakiana.

Hyla arfakiana, *Peters & Doria, Ann. Mus. Civ. Genov.* xiii. 1878, p. 421, pl. 6. f. 2.

Tongue suboval, indistinctly nicked and free behind. Vomerine teeth in two oblique series between the choanæ. Head as long as broad; snout acuminate, longer than the diameter of the orbit; canthus rostralis angular, straight; loreal region not very oblique; interorbital space broader than the upper eyelid; tympanum very small, not quite one third the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes two-thirds webbed; disks of fingers half the diameter of the eye, of toes smaller; subarticular tubercles small. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. Skin smooth above; belly and lower surface of thighs granulate; heel with a short triangular dermal appendage. (Colour very variable.) Upper surfaces with a few dark spots and a large dark hourglass-shaped spot on the back, commencing between the eyes; loreal region dark; hinder side of thighs purplish brown; beneath brownish, mottled with greyish. From snout to vent 57 millim.

New Guinea.

a. ♀. N. Guinea.

124. Hyla aurea.

Hyla aurea, *Günth. Cat.* p. 114.

Rana aurea, *Lesson, Voy. Coquille, Zool.* ii. p. 60, pl. 7. f. 2.

Ranoidea jacksoniensis, (*Bibr.*) *Tschudi, Batr.* p. 79.

Hyla jacksoniensis, *Dum. & Bibr.* p. 602; *Gray, in Grey's Journ. Exp. Austr.* pl. 8. f. 3 (without name).

Ranoidea resplendens, *Girard, Proc. Ac. Philad.* vi. 1853, p. 422, *and U.S. Expl. Exped., Herp.* p. 48, pl. 3. f. 7–12.

—— aurea, *Girard, U.S. Explor. Exped., Herp.* p. 48.

Litoria aurea, *Günth. Proc. Zool. Soc.* 1864, p. 49.

Hyla aurea, *Steindachn. Novara, Amph.* p. 61; *Keferst. Arch. f. Naturg.* 1868, p. 284, pl. 7. f. 18 & 19.

Chirodryas raniformis, *Keferst. Götting. Nachr.* 1867, p. 358.

l. d. f. Arfak Mountⁿˢ. Doria.

δ. P. Mauritanica introduced Sayard.

Habit raniform. Tongue suboval, nicked and free behind. Vomerine teeth between the choanæ, in two slightly oblique series convergent posteriorly. Head as long as broad, or a little longer than broad, resembling in shape that of *Rana esculenta*; snout longer than the diameter of the eye; canthus rostralis moderately distinct; loreal region slightly concave; interorbital space narrower than the upper eyelid; tympanum very distinct, half or two thirds the diameter of the eye. Fingers free; no distinct rudiment of pollex; toes entirely webbed, or nearly so; disks small, about half the diameter of the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, sometimes not quite so far, sometimes a little beyond. Skin smooth or warty above, granulate beneath; a more or less indistinct glandular lateral fold. Bluish or olive above, spotted or marbled with blue or brown; a dark streak on the canthus rostralis; generally a whitish band on each side of the back; sometimes a light vertebral band; beneath whitish, immaculate. Male with two internal vocal sacs; during the breeding-season the inner side of the first finger furnished with brown rugosities. From snout to vent 79 millim.

Australia.

a–b, c–d, e–f, g. ♂, ♀, hgr., & yg.	Port Essington.	Dr. Fleming [P.].
h. ♀.	Melbourne.	G. Krefft, Esq. [P.].
i. ♀.	Melbourne.	A. E. Craven, Esq. [P.].
k. Hgr.	King George's Sound.	Haslar Hospital.
l. ♀.	King George's Sound.	G. Krefft, Esq. [P.].
m–n. Hgr. & yg.	Swan River.	Sir A. Smith [P.].
o, p, q. ♂ & hgr.	Swan River.	
r–s, t–w, x–α. ♂, ♀, hgr., & yg.	W. Australia.	
β, γ. ♀, skeleton.	Australia.	
δ. ♀.	Australia.	C. Darwin, Esq. [P.].
ε. Hgr.	Australia.	Mr. W. Buchanan.
ζ–η. ♀ & hgr.	Australia.	G. Krefft, Esq. [P.].
θ, ι–λ. ♀, hgr., & yg.	Tasmania.	R. Gunn, Esq. [P.].
μ–π. Yg.	Tasmania.	Capt. Ross's Exped.
ρ. Hgr.	China (???).	C. Bowring, Esq. [P.].

VAR. **cyclorhynchus.**

Litoria aurea, var., *Günth. Proc. Zool. Soc.* 1870, p. 402, pl. 30. f. 3.

Snout shorter, more rounded. Groin and sides of thighs black, with white spots; lower surfaces densely reticulated with black, these being, however, immaculate in the young specimen. Perhaps a species.

σ–χ. ♂, ♀, & yg.	W. Australia.	G. Krefft, Esq. [P.].

125. Hyla obtusirostris.

Litoria obtusirostris, *Meyer, Mon. Berl. Ac.* 1874, p. 139.

Vomerine teeth in two round groups behind the level of the choanæ. Head broad; snout obtuse; canthus rostralis very weak; loreal region slightly concave; tympanum half the diameter of the eye. Fingers free, toes entirely webbed; disks moderate. Tibio-tarsal articulation reaching beyond the tip of the snout. Upper surfaces finely warty. Bluish grey above, the warts yellowish. From snout to vent 37 millim.

Jobi, New Guinea.

126. Hyla lesueurii.

Hyla lesueurii, *Dum. & Bibr.* p. 595; *Keferst. Arch. f. Naturg.* 1868, p. 278, pl. 7. f. 24 & 25, & pl. 8. f. 26.
Litoria wilcoxii, *Günth. Proc. Zool. Soc.* 1864, p. 48.
? Litoria copei, *Steindachn. Novara, Amph.* p. 56, pl. 3. f. 14–17.
Litoria lesueurii, *Peters, Mon. Berl. Ac.* 1873, p. 611.

Habit slender. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two straight or slightly oblique series between the front part of the choanæ. Head as long as broad, resembling exactly that of *Rana agilis*; snout slightly prominent, acuminate, once and a half or once and two thirds as long as the diameter of the eye; canthus rostralis angular; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, half or two thirds the diameter of the eye. Fingers free, first and second equal; no distinct rudiment of pollex; toes two-thirds webbed; disks small; subarticular tubercles well developed; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout or beyond. Skin smooth above, granulate on the belly and under the thighs; a curved fold from the eye over the tympanum. Olive or purplish above, uniform or with more or less distinct darker markings; a black streak from the tip of the snout, through the eye, to the side; groin black-marbled; hinder side of thighs black, white-spotted; beneath whitish, immaculate, or marbled with brown on the throat. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 65 millim.

Australia.

a–b. Hgr.	Clarence River.	G. Krefft, Esq. [P.]. (Types of *Litoria wilcoxii*.)
c, d. ♂ ♀.	Clarence River.	G. Krefft, Esq. [P.].
e. ♀.	Sydney.	Mus. Godeffroy.
f. ♀.	Sydney.	
g. Hgr.	Fort Curtis.	G. Krefft, Esq. [P.].
h. ♀.	Errumanga?	

l - l. ♀ & hyp. Ft. Mackay, Leichhardt. Line North.
m - n. ♀ & yyg. Juntawang, nr Mudgee, N.S.W. Fletcher
o. ♀ Springwood, Blue Mts. N. S. W. "
p. ♂ Illawarra, N. S. W. "

, d. 7

Pt. Darwin. Walker.

127. Hyla nigrofrenata. (Plate XXVI. fig. 2.)

Hyla nigrofrenata, *Günth. Ann. & Mag. N. H.* (3) xx. 1867, p. 56.

Tongue suboval, slightly nicked and free behind. Vomerine teeth in two transverse groups on a level with the front part of the choanæ; latter vertically elliptic. Habit slender. Head longer than broad; snout acuminate; the distance between the eye and the nostril equals the diameter of the former; canthus rostralis distinct; loreal region oblique, slightly concave; interorbital space a little broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers free, first extending slightly beyond second; no distinct rudiment of pollex; toes slender, two-thirds webbed; disks very small; subarticular tubercles very prominent; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches far beyond the tip of the snout. Skin smooth, granulate on the belly and under the thighs. Light olive above; a broad black band on each side of the head, through the eye, followed by a black spot; a blackish band across the back of the wrist; sides of hind limbs with a blackish line; hinder side of thighs marbled with blackish; beneath whitish, immaculate. From snout to vent 41 millim.

N. Australia.

a. ♀.	Cape York.	Hr. Dämel [C.].	Types.
b. ♀.	Cape York.		

128. Hyla affinis. (Plate XXVI. fig. 3.)

Litoria freycineti, *Günth. Cat.* p. 97.

Pelodytes affinis, *Gray, Zool. Misc.* p. 56.

Habit slender. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two oblique groups between the choanæ; latter vertically elliptic. Head longer than broad, resembling that of *Rana agilis*; snout acuminate, rather prominent, once and a half as long as the diameter of the eye; canthus rostralis distinct; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers slender, free, first a little longer than second; no distinct rudiment of pollex; toes slender, somewhat more than half webbed; disks very small; subarticular tubercles small, but very prominent; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the nostril or the tip of the snout. Skin smooth above; belly and lower surface of thighs granulate. Brown above; loreal and temporal regions blackish; hinder side of thighs black- and white-marbled; beneath whitish, immaculate; the male's throat brown. Male with an internal subgular vocal sac. From snout to vent 35 millim.

N. Australia.

a. ♂.	Port Essington.	(Type.)
b. ♀.	Rockhampton.	

129. Hyla latopalmata. (Plate XXVI. fig. 4.)

Litoria latopalmata, *Günth. Ann. & Mag. N. H.* (3) xx. 1867, p. 55.

Habit very slender. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two slightly oblique groups between the choanæ; latter vertically elliptic. Head longer than broad, resembling that of *Rana mascareniensis*; snout rather prominent, acuminate, twice as long as the diameter of the eye, or nearly so; canthus rostralis distinct, rather obtuse; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers slender, free, first a little longer than second; no distinct rudiment of pollex; toes slender, two-thirds webbed; disks very small; subarticular tubercles small but very prominent; two metatarsal tubercles, outer very small; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces smooth, or with a few indistinct warts on the back; belly and lower surface of thighs granulate. Brownish or olive above, with irregular dark spots; a dark streak along loreal and temporal regions; lips white-spotted; sides of thighs marbled with black; beneath whitish, immaculate. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 37 millim.

Eastern Australia.

a–b. ♀.	Port Denison.	G. Krefft, Esq. [P.]. (Types.)
c. ♀.	Queensland.	
d–f. ♀ & hgr.	Brisbane.	G. Krefft, Esq. [C.].
g. ♂ ♀.	Richmond.	G. Krefft, Esq. [P.].
h. Many spec.: ♂, ♀, hgr., & yg.	——?	G. Krefft, Esq. [P.].

130. Hyla freycineti.

Litoria freycineti, *Dum. & Bibr.* p. 504, pl. 88. f. 2; *Tschudi, Batr.* p. 77; *Steindachn. Novara, Amph.* p. 55.
—— mystacina, *Keferst. Götting. Nachr.* 1867, p. 356.
Hyla freycineti, *Keferst. Arch. f. Naturg.* 1868, p. 276, pl. 6. f. 17.

Habit very slender. Tongue subcircular or suboval, nicked and free behind. Vomerine teeth in two transverse or slightly oblique series on a level with the front edge of the choanæ; latter vertically elliptic. Head much longer than broad, resembling that of *Rana fasciata*; snout prominent, pointed, twice as long as the diameter of the eye; canthus rostralis distinct; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum very distinct, two thirds or three fourths the diameter of the eye. Fingers slender, free, first and second equal; no distinct rudiment of pollex; toes slender, half webbed; disks very small; subarticular tubercles well developed; two metatarsal tubercles, outer very

i. ♀ S. Creek, nr Sydney. Fletcher.
d. l. ♂♀ Dandaloo, N. S. Wales. "
m. o. ♂♀. Adelaide R., N. Australia.
Walker.

h-i. ♀ Sydney. Fletcher

g. ♀ Murray R? Macfarlane.
sh-l. ♂♀ Pt Mackay, Queensland, Lieut Roth.
m. Hgr. Adelaide R., N. Australia. Walker

small: a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces with smooth warts: belly and lower surface of thighs granulate. Brownish or olive above, with large insuliform, more or less confluent dark spots: a blackish streak along loreal and temporal regions: lips and sides of thighs generally spotted with whitish; beneath whitish, immaculate: the male's throat brownish. Male with an internal subgular vocal sac: during the breeding-season the inner side of the first finger covered with brown rugosities. From snout to vent 47 millim.

Eastern Australia.

a–c, d. ♂, ♀, & yg.	Sydney.	G. Krefft, Esq. [C.].
e, f, g. ♂ ♀.	Australia.	G. Krefft, Esq. [C.].

131. Hyla nasuta.

Litoria nasuta, *Günth. Cat.* p. 97.
Pelodytes nasutus, *Gray, Zool. Misc.* p. 56.
Litoria nasuta, *Steindachn. Novara, Amph.* p. 56.
Hyla nasuta, *Keferst. Arch. f. Naturg.* 1868, p. 277, pl. 6. f. 16.

Closely allied to *H. freycineti*, from which it may be distinguished at once by the presence of numerous longitudinal plaits on the back. Besides, the hind limb and, especially, the toes are still more elongate, and the web between the latter is somewhat more developed. Dark markings arranged in longitudinal bands on the back: a light streak along each side of the middle of the back; hinder side of thighs with one or two more or less defined black longitudinal streaks. Otherwise as in *H. freycineti*. From snout to vent 48 millim.

Northern and Eastern Australia.

a. ♀.	Port Essington.	(Type.)
b. ♂.	Port Essington.	Earl of Derby [P.].
c. ♀.	Brisbane.	G. Krefft, Esq. [C.].
d–e. ♀ & hgr.	Clarence River.	G. Krefft, Esq. [C.].
f. Hgr.	Australia.	Sir J. Richardson [P.].

132. Hyla dimolops.

Litoria punctata, *Günth. Cat.* p. 145.
Litoria punctata, *A. Dum. Ann. Sc. Nat.* 1853, p. 149.
Hyla dimolops, *Cope, Proc. Amer. Philos. Soc.* xi. 1869, p. 163.

Vomerine teeth in two oblique series. Head shorter than in *H. freycineti*. Toes nearly entirely webbed. Upper surfaces smooth: a narrow glandular lateral fold. Bluish grey above: back with scattered black dots; inner side of hind limbs black- and yellow-marbled. Otherwise as in *H. freycineti*.

Sydney.

5. NOTOTREMA.

Hyla, sp., *Dum. & Bibr.* viii. p. 598.
Gastrotheca, *Fitzing. Syst. Rept.* i. p. 30.
Notodelphys, *Weinland, Mon. Berl. Ac.* 1854, p. 372.
Nototrema, *Günth. Cat.* p. 115; *Cope, Nat. Hist. Rev.* 1865, p. 109, *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.
Opisthodelphys, *Günth. l. c.* p. 117; *Cope, Nat. Hist. Rev.* 1865, p. 109, *and Journ. Ac. Philad.* (2) vi. p. 85.

Pupil horizontal. Tongue subcircular, entire or slightly nicked, little free behind. Vomerine teeth. Tympanum distinct. Fingers webbed at the base; toes webbed, the tips dilated into regular disks. Outer metatarsals united. Female with a dorsal pouch. Omosternum cartilaginous: sternum a cartilaginous plate. Diapophyses of sacral vertebra moderately dilated.

Tropical America.

Synopsis of the Species.

I. Derm of head free from cranial ossification.

Tibio-tarsal articulation not reaching beyond the eye; interorbital space not broader than the diameter of the orbit. 1. *marsupiatum*, p. 416.
Tibio-tarsal articulation not reaching beyond the eye; interorbital width greater than the diameter of the orbit. 2. *plumbeum*, p. 417.
Tibio-tarsal articulation reaching nearly the tip of the snout; skin of back with bony deposits ..... 3. *testudineum*, p. 417.
Tibio-tarsal articulation reaching beyond the tip of the snout ..... 4. *longipes*, p. 418.

II. Derm of head completely involved in the rugose cranial ossification .. 5. *oviferum*, p. 418.

1. Nototrema marsupiatum.

Nototrema marsupiatum, *Günth. Cat.* p. 116, pl. 10. f. B.
Hyla marsupiata, *Dum. & Bibr.* p. 598, pl. 98; *Guichen. in Casteln. Anim. nouv. ou rares de l'Amér. du Sud, Rept.* p. 86.
Nototrema marsupiatum, *Günth. Proc. Zool. Soc.* 1859, p. 417; *Espada, Viaj. Pacif., Vertebr.* pl. 4. f. 1.

Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two short straight series on a level with the hinder edge of the choanæ. Head moderate, broader than long; skull rugose in the adult, the derm of the head, however, remaining free; snout rounded, much longer than the diameter of the eye; loreal region not concave; canthus rostralis distinct; interorbital space broader than the upper eyelid, concave in full-grown specimens; tympanum

distinct, half or two thirds the diameter of the eye. Fingers with a very slight rudiment of web; toes half webbed; disks nearly as large as the tympanum; subarticular tubercles moderate; a distinct fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or not quite so far. Skin smooth or warty above, granulate beneath. Above uniform bluish olive (in spirits), or greenish olive with bluish or dark-green, black-edged longitudinal spots, and with transverse bars on the limbs; beneath whitish, immaculate or brown-spotted. Male with an external subgular vocal sac. From snout to vent 72 millim.

Peru; Ecuador.

a–b, c–d, e, f, g, h. Many spec., ♂ ♀.	Andes of Ecuador.	Mr. Fraser [C.].
i–k, l. ♀.	W. Ecuador.	Mr. Fraser [C.].
m. Several spec., ♂ & hgr.	Guayaquil.	Mr. Fraser [C.].
n. ♀.	Quito.	
o. ♀.	Intac.	Mr. Buckley [C.].
p. Yg.	Paitanga.	Mr. Buckley [C.].

2. Nototrema plumbeum. (PLATE XXVIII. fig. 1.)

Very closely allied to *N. marsupiatum*, from which it differs in the wider interorbital space (this being considerably wider than the diameter of the orbit), the larger disks of the fingers (these being a little larger than the tympanum), and coloration. Above dark lead-colour, minutely speckled all over with lighter; beneath uniform lead-colour. From snout to vent 66 millim.

Ecuador.

a. ♀.	Intac.	Mr. Buckley [C.].

3. Nototrema testudineum.

Nototrema testudineum, *Espada, Jorn. Sc. Lisb.* ix. 1870, p. 62, *and Viaj. Pacif., Vertebr.* pl. 4. f. 2.

Vomerine teeth in two slightly oblique series between the choanæ. Interorbital space deeply concave; tympanum not very distinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the tip of the snout. Derm of back studded with stellate bony deposits. Uniform lead-colour above, lighter beneath. Otherwise as in *N. marsupiatum*. From snout to vent 82 millim.

Ecuador; Peru.

a.	Pozuzu, Peru.	W. Davis [C.].

In this species, as in *N. ovifrum*, the young undergo their complete metamorphosis in the maternal pouch; whilst in *N. marsupiatum* they leave the pouch in the tadpole state.

4. Nototrema longipes. (Plate XXVII.)

Tongue subcircular, nicked and free behind. Vomerine teeth in two straight series between the choanæ. Head moderate, broader than long; fronto-parietals strongly ossified, rugose, pitted or vermiculated, not confluent with the derm of the head; snout elevated, the tip obliquely truncate from nostril to lip, much longer than the diameter of the eye; loreal region slightly concave; canthus rostralis angular; interorbital space not concave, broader than the upper eyelid; tympanum moderately distinct, about half the diameter of the eye. Three outer fingers one-fourth webbed; toes nearly entirely webbed; disks as large as the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin smooth above, granulate beneath; heel with a very short dermal spur; a small conical tubercle near the edge of the upper eyelid. Yellowish above; female minutely speckled with brown on the back; male with a broad brown cross band between the eyes, a line from the eye to the vertical of the axilla, and five spots of the same colour on the back—these markings formed by the aggregation of dark-brown dots; a brown, white-edged line along the outer edge of the tarsus and fifth toe, and another transversely above the vent. From snout to vent 82 millim.

Ecuador.

a. ♀.	Canelos.	Mr. Buckley [C.].
b. ♂.	Sarayacu.	Mr. Buckley [C.].

5. Nototrema oviferum.

Opisthodelphys ovifera, *Günth. Cat.* p. 117.
Notodelphys ovifera, *Weinland, Mon. Berl. Ac.* 1854, p. 372, *and Arch. f. Anat. Physiol.* 1854, p. 449, pls. 17–19.

Tongue subcircular, entire and slightly free behind. Vomerine teeth in two short straight series on a level with the hinder edge of the choanæ. Head moderate, a little broader than long, forming a rugose casque, the derm being involved in the cranial ossification; posterior border of casque, supratympanic, supraorbital, and canthal ridges with erect spines; snout rounded, scarcely longer than the diameter of the orbit; loreal region and crown concave; interorbital space broader than the upper eyelid; tympanum very distinct, nearly as large as the eye. Fingers webbed at the base; toes short, half webbed; disks well developed, but much smaller than the tympanum; subarticular tubercles moderate; a slight fold along the inner edge of the tarsus. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath. Brown above; sides with large dark spots; others on the foot, tarsus, inner side of thighs, and upper surface of thighs, the latter

Notoriema fissipes, Blgr.
Iguarassé, Pernambuco. Ramage (Pzhv)

forming cross bars; beneath brownish. Male without vocal sac. From snout to vent 60 millim.

Venezuela; Central America.

a. ♂. Cordova. M. Sallé [C.].

6. HYLELLA*.

Hylella, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 199; *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Exerodonta, *Brocchi, Bull. Soc. Philom.* (7) iii. p. 19.
Hylomantis, *Peters, Mon. Berl. Ac.* 1880, p. 223.

Pupil horizontal. Tongue circular or suboval, slightly nicked and free behind. Vomerine teeth none. Tympanum distinct or indistinct. Fingers webbed at the base; toes extensively webbed, the tips dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous: sternum a cartilaginous plate. Diapophyses of sacral vertebra moderately dilated.

Tropical America; Australia.

Synopsis of the Species.

I. Tympanum indistinct, very small.

Tongue oval; loreal region vertical; fingers one-third webbed ..... 1. *tenera*, p. 419.
Tongue round; fingers one-third webbed; tympanum surmounted by a fold ..... 2. *carnea*, p. 420.
Tongue round; loreal region oblique; fingers not one-third webbed ..... 3. *buckleyi*, p. 420.

II. Tympanum perfectly distinct.

Tympanum one fourth the diameter of the eye; disks of fingers of the same size as the tympanum; skin smooth above. 4. *sumichrasti*, p. 420.
Tympanum half the diameter of the eye; disks of fingers smaller than the tympanum ..... 5. *bicolor*, p. 421.
Tympanum one fourth the diameter of the eye; skin warty above ..... 6. *nigropunctata*, p. 421.

1. Hylella tenera.

Hylella tenera, *Reinh. & Lütk. Vidensk. Meddel.* 1861, p. 200.

Tongue oval, slightly nicked. Head short and broad; canthus

* *Hyperolius pygmæus*, Meyer, Mon. Berl. Ac. 1874, p. 132.—Jobi, New Guinea.

rostralis distinct; loreal region vertical; tympanum indistinct; eustachian tubes minute. Fingers one-third webbed; toes nearly entirely webbed; disks moderate; subarticular tubercles scarcely distinct. Reddish-grey above, with three dark Λ-shaped markings, the anterior one between the eyes and less distinct; legs with blackish cross bands.

Brazil.

2. Hylella carnea.

Hylella carnea, *Cope, Proc. Ac. Philad.* 1868, p. 111.

Tongue round. Head broad and rounded; end of snout vertical; canthus rostralis moderately distinct; eyes large and prominent; tympanum indistinct and small. Fingers one-third webbed; disks of moderate size. Limbs slender. Skin smooth above; tympanum surmounted by a fold. The exterior coloration does not appear on the femur, and only as a faint line on humerus; the pigment is light rose-yellow; three narrow bands across tibia, two across forearm; a broad blood-red band between the eyes, each extremity sending a blood-red band on each side the back to the vent, with a connecting spot of the same on the coccyx; a deep red band from scapular region to end of snout; beneath uniform whitish.

Upper Amazon.

3. Hylella buckleyi. (Plate XXV. fig. 5.)

Tongue circular, slightly nicked. Head broader than long; snout rounded, as long as the diameter of the orbit; canthus rostralis very indistinct; loreal region high, oblique; interorbital space broader than the upper eyelid; tympanum extremely small, scarcely distinct. Fingers webbed at the base, first and second equal; toes two-thirds webbed; disks well developed, those of the fingers half the diameter of the eye; subarticular tubercles little developed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin smooth, belly and lower surface of thighs granulate. Head and back uniform purplish blue; upper lip white-margined; forearm, tibia, and a narrow, very indistinct line along the femur and tarsus blue; in one specimen the tibia and femur are dotted with white, the remaining parts not coloured. Male with an external subgular vocal sac. From snout to vent 29 millim.

E. Ecuador.

a. ♂.	Intac.	Mr. Buckley [C.].
b. ♀.	Paitanga.	Mr. Buckley [C.].

4. Hylella sumichrasti.

Exerodonta sumichrasti, *Brocchi, Bull. Soc. Philom.* (7) iii. p. 20.

Tongue subcircular, slightly nicked. Head as broad as long;

Hylella göldii Bgr.

a. ♀ Sages. Sta Catharina. Michaelis } (Tspes)
b. ♂ Theresopoli Göldi }

i. k. Hgr Pt Darwin. Walker
l. p. " Adelaide R. N. Australia. "

loreal region oblique; tympanum very small, about one fourth the diameter of the eye. Fingers webbed at the base; toes two-thirds webbed; disks moderate, those of the fingers equalling the tympanum in diameter. Skin smooth, belly and lower surface of thighs granulate; a fold from axilla to groin. Light violet-grey above, light yellow beneath.

Tehuantepec.

5. Hylella bicolor.

Hyperolius? bicolor, *Günth. Cat.* p. 89.
Eucnemis bicolor, *Gray, Zool. Misc.* p. 5.
Hylomantis fallax, *Peters, Mon. Berl. Ac.* 1880, p. 224, pl. 1. f. 4.

Tongue suboval, slightly nicked. Head as broad as long; snout subtriangular, rather prominent, as long as the diameter of the orbit; canthus rostralis distinct; loreal region vertical; interorbital space broader than the upper eyelid; tympanum distinct, about half the diameter of the eye. Fingers webbed at the base, first shorter than second; toes nearly entirely webbed; disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or not quite so far. Skin smooth, belly and lower surface of thighs granulate; a strong fold across the chest. Bluish above, immaculate or dotted with blackish; a blackish streak on canthus rostralis and temporal region; a white band from below the eye to the shoulder, sometimes continued along the side of the body; beneath whitish, immaculate. Male with an external subgular vocal sac.

Australia.

a. ♀.	Port Essington.	(Type.)
b. ♀.	Cape York.	Hr. Dämel [C.].
c–d. ♂ ♀.	Port Denison.	G. Krefft, Esq. [C.].
e. ♀.	Blue Mountains.	G. Krefft, Esq. [C.].
f. ♀.	Brisbane.	G. Krefft, Esq. [C.].
g–h. ♂.	Peak Downs.	Mus. Godeffroy.

6. Hylella nigropunctata.

Hyperolius nigropunctatus, *Meyer, Mon. Berl. Ac.* 1874, p. 139.

Allied to *H. bicolor*. Head short; snout very obtuse; loreal region high, slightly convex; tympanum one fourth the diameter of the eye. Tibio-tarsal articulation reaching beyond the tip of the snout. Skin warty. Blue above, dotted with black; hind limbs with black cross bars; humerus white; breast white, belly and lower surface of thighs yellowish.

Jobi, New Guinea.

7. NYCTIMANTIS.

Pupil erect. Tongue subcircular, scarcely free behind, entire.

Vomerine teeth. Tympanum distinct. Fingers free; toes webbed, the tips dilated into large disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra moderately dilated.

Ecuador.

The erect pupil distinguishes this genus from *Hyla*, and the adherence of the tongue in nearly its whole extent from *Agalychnis*.

1. Nyctimantis rugiceps. (Plate XXVIII. fig. 2.)

Vomerine teeth in two strong series on a level with the hinder edge of the large choanæ, forming a very open chevron, the point of which is turned forwards. Head large, rough, the derm being involved in the cranial ossification; snout rounded, twice as long as the diameter of the eye; loreal region very oblique, scarcely concave; canthus rostralis distinct; interorbital space broader than the upper eyelid; tympanum very distinct, two thirds the diameter of the eye. Fingers free, toes two-thirds webbed; disks smaller than the tympanum; subarticular tubercles not much developed. The hind limb being carried forwards along the body, the tibiotarsal articulation reaches between the eye and the tip of the snout. Skin smooth above, granulate beneath. Light olive-grey or brownish above, dark chestnut-brown on the sides and beneath, the two colours sharply defined; back and upper surface of tibiæ generally rather indistinctly dotted with brown; generally one or two chestnut-brown spots on the back; upper lip white-margined; a broad whitish streak on each side of the body, beginning a short distance from the arm and ending a short distance from the thigh; this streak may be broken up into spots. Male with an internal subgular vocal sac. From snout to vent 70 millim.

Ecuador.

a. ♂.	Ecuador.	Mr. Buckley [C.].
b–d. ♂ ♀.	Canelos.	Mr. Buckley [C.].

8. AGALYCHNIS.

Agalychnis, *Cope, Proc. Ac. Philad.* 1865, p. 194, *and Nat. Hist. Rev.* 1865, p. 110.

Agalychnis, part., *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.

Pupil erect. Tongue oval, extensively free behind, slightly nicked. Vomerine teeth. Tympanum distinct. Fingers and toes webbed, the tips dilated into large disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra strongly dilated.

C. America.

1. Agalychnis moreletii.

Hyla moreletii, *A. Dum. Ann. Sc. Nat.* (3) xix. 1853, p. 169;

Pternohyla fodiens, Blgr.

a. ♀ Presidio, W. Mexico. Forrer. (Type)

b-d. ♀ Phgr. " " "

Agalychnis helena Cope

a. ♀ Guatemala. Institut. of Jamaica.

b. ♂ " Greenway.

c. ♂ Ad. ryz. Hacienda Rosa de Jericho, Nicaragua, 3250 ft. Rothschuh.

Keferst. Götting. Nachr. 1867, p. 356, *and Arch. f. Naturg.* 1868, p. 297; *Brocchi, Bull. Soc. Philom.* (7) i. p. 122, *and Miss. Sc. Mex., Batr.* pl. 1. f. 1.

Hyla holochlora, *Salvin, Proc. Zool. Soc.* 1862. p. 460, pl. 32. f. 2.

Agalychnis holochlora, *Cope, Nat. Hist. Rev.* 1865, p. 110.

—— moreletii, *Cope, l. c.*

Tongue oval, nicked behind. Vomerine teeth in two short horizontal, nearly straight series on a level with the front edge of the choanæ. Head depressed; snout rounded; canthus rostralis distinct; interorbital space slightly concave; tympanum about two thirds the width of the eye. Limbs slender; the hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout; arm much thinner than forearm; fingers at least half webbed, sometimes nearly to the disks; toes two-thirds or three-fourths webbed; disks of fingers and toes large, larger than the tympanum; subarticular tubercles very prominent; a more or less distinct narrow fold along the inner side of the tarsus. Skin smooth, granulate on the belly, under the thighs, and above the vent. Blue-green or violet above, uniform; sides and lower surfaces yellowish. Male with a subgular vocal sac.

C. America.

a. ♀.	Coban.	O. Salvin, Esq. [P.]. (Type of *Hyla holochlora*.)
b, c. ♂ ♀.	Guatemala.	O. Salvin, Esq. [P.].
d, e, f, g. ♂, ♀, & hgr.	Cartago, Costa Rica.	
h. ♀.	Neighbourhood of Nazu, Costa Rica.	Messrs. Salvin & Godman [P.].
i–k. ♂ ♀.	Costa Rica.	

2. Agalychnis callidryas.

Hyla callidryas, *Cope, Proc. Ac. Philad.* 1862, p. 359.

Agalychnis callidryas, *Cope, Nat. Hist. Rev.* 1865, p. 110.

Tongue elongate, elliptic, openly emarginate. Vomerine teeth in two oblique series, convergent posteriorly, anteriorly opposite anterior border of choanæ. Head elongate, maxillary outlines convergent, nearly straight; loreal region subvertical; canthus rostralis straight, rounded; tympanum nearly as large as the eye, obliquely elliptic. Fingers one-fourth, toes half webbed; disks very large. Heel reaching the end of the snout when extended. Skin above smooth. Blue-purple above, greenish on the scapular region; humerus, femur (except a narrow blue stripe), and under surfaces uniform saffron; numerous oblique bands of a lighter yellow on the sides.

Panama.

9. PHYLLOMEDUSA.

Phyllomedusa, *Wagl. Syst. Amph.* p. 201; *Tschudi, Batr.* p. 70; *Dum. & Bibr.* viii. p. 627; *Günth. Cat.* p. 120; *Cope, Nat. Hist. Rev.* 1865, p. 110, *and Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Pithecopus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.
Hylomantis, *Peters, Mon. Berl. Ac.* 1872, p. 772.
Agalychnis, sp., *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.

Pupil erect. Tongue oval, extensively free behind, entire or slightly nicked. Vomerine teeth present or absent. Fingers and toes free or shortly webbed, first opposite to the others, the tips dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra strongly dilated.

Tropical America.

Synopsis of the Species.

I. First toe a little shorter than second; parotoids none, or indistinct.

Fingers one-third webbed, toes nearly half-webbed ..... 1. *buckleyi*, p. 425.
Fingers free, toes slightly webbed at the base; upper surfaces smooth .. 2. *lemur*, p. 425.
Fingers free, toes with a rudiment of web; upper surfaces tubercular .. 3. *aspera*, p. 425.
Fingers webbed at the base; toes one-third webbed; upper surfaces smooth. 4. *dacnicolor*, p. 426.

II. First and second toes equal.

Parotoids indistinct; heel with two dermal processes ..... 5. *palliata*, p. 426.
Parotoids large, distinct; upper surfaces studded with bony deposits .. 6. *bicolor*, p. 427.

III. First toe longer than second.

Parotoids distinct, short; upper surfaces studded with bony deposits .. 7. *vaillantii*, p. 427.
Parotoids not prominent, extending from orbit to sacrum ..... 8. *tarsius*, p. 428.
Parotoids very prominent, at least as long as the head ..... 9. *burmeisteri*, p. 428.
Parotoids very prominent, much shorter than the head..... 10. *sauvagii*, p. 429.
Parotoids none; tympanum half the diameter of the eye ..... 11. *cœlestis*, p. 429.
Parotoids indistinct; tympanum one third the diameter of the eye; heel with two dermal processes ..... 12. *tomopterna*, p. 430.

Parotoids scarcely distinct; tympanum not half the diameter of the eye; sides and limbs with dark vertical bars ..... 13. *hypochondrialis*, p. 430.

1. Phyllomedusa buckleyi. (PLATE XXIX. fig. 1.)

Tongue small, entire. Vomerine teeth none. Snout a little longer than the diameter of the eye, rounded; loreal region slightly oblique; interorbital space much broader than the upper eyelid; tympanum hidden. Fingers one-third webbed, toes nearly half webbed; first finger shorter than second, fourth slightly shorter than third; first toe a little shorter than second; disks of fingers and toes moderate, about one third the diameter of the eye; subarticular tubercles moderately prominent; inner metatarsal tubercle scarcely prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches a little beyond the tip of the snout. Skin smooth, granulate on the belly; parotoids none. Lilac above, minutely dotted with lighter; humerus, femur, hand, and foot (except outer toe) not coloured; beneath whitish, immaculate. From snout to vent 32 millim.

Ecuador.

a. Hgr. Sarayacu. Mr. Buckley [C.].

2. Phyllomedusa lemur.

Tongue very slightly emarginate posteriorly. Vomerine teeth none. Snout slightly longer than the diameter of the eye, narrowed, truncate at the end; loreal region nearly vertical; eyes very prominent, obliquely directed forwards; interorbital space broader than the upper eyelid; tympanum not quite one third the diameter of the eye. Fingers free, toes slightly webbed at the base; first finger shorter than second; first toe slightly shorter than second; disks of fingers and toes a little larger than the tympanum; subarticular tubercles moderately prominent; inner metatarsal tubercle very indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tip of the snout. Skin smooth, slightly granulate on the belly; parotoids none. Light lilac above, scantily speckled with purplish red; fingers, toes, arms, thighs (except a band along the upperside), and lower surfaces not coloured; throat whitish lilac. From snout to vent 43 millims.

Costa Rica.

a. ♀. Costa Rica.

3. Phyllomedusa aspera.

Hylomantis aspera, *Peters, Mon. Berl. Ac.* 1872, p. 772, pl. 1. f. 2.

Tongue slightly emarginate behind. Vomerine teeth in two small oblique groups between the choanæ. Head depressed; snout short;

loreal region oblique; tympanum one third the diameter of the eye. An indistinct web between the third and fourth fingers; first finger shorter than second, fourth a little shorter than third; toes with a rudiment of web, first a little shorter than second; disks of fingers and toes as large as the tympanum; subarticular tubercles well developed. Upper surfaces tubercular; parotoids none. Violet or greyish violet above, with or without rust-coloured or whitish dark-edged spots; sides yellowish; upper surface of forearm, femur, tibia, tarsus, and fifth toe violet; the remainder and lower surfaces yellowish.

Bahia.

4. Phyllomedusa dacnicolor.

Phyllomedusa dacnicolor, *Cope, Proc. Ac. Philad.* 1864, p. 181.
Agalychnis dacnicolor, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86.

Tongue very slightly emarginate posteriorly. Vomerine teeth in two short, straight, transverse rows on a level with the anterior margin of the choanæ. Snout longer than the diameter of the eye, obliquely truncated from behind forwards; loreal region oblique; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers webbed at the base, toes one-third webbed; first finger shorter than second; first toe a little shorter than second; disks of fingers and toes much smaller than the tympanum; subarticular tubercles very prominent; a prominent inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the tympanum. Skin smooth, granulate on the belly and under the thighs; parotoids indistinct. Upper surfaces uniform violet; sides and lower surfaces whitish, immaculate. ~~Size of *Hyla arborea*.~~

Mexico.

a. ♀. *Hyl.* San Blas. Mr. Forrer [C.].

5. Phyllomedusa palliata.

Phyllomedusa palliata, *Peters, Mon. Berl. Ac.* 1872, p. 773.

Tongue indistinctly emarginate. Vomerine teeth in two oblique groups on a level with the front edge of the choanæ. Snout longer than the diameter of the eye, truncate; loreal region nearly vertical; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers free, first shorter than second, fourth considerably shorter than third; toes with a distinct rudiment of web, first and second equal; disks of fingers nearly as large as the tympanum, of toes rather smaller; inner metatarsal tubercle not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin smooth, granulate on the belly and under the thighs; parotoids indistinct; heel with two dermal processes, one projecting inwards and one outwards. Blue-green above; concealed portions of limbs

b-c.
l. f. ♂♀

Presidio
Hda Sta Gertrudis. Mascota. Jalisco.
Forrer.
Buller.

and sides of body, also hands and feet, white, with vertical purplish-brown bands; a narrow blue band along the thigh; lower surfaces immaculate. Male with a subgular vocal sac. From snout to vent 49 millim.

Upper Amazon.

a. ♂.	Pebas.	H. W. Bates, Esq. [C.].

6. Phyllomedusa bicolor.

Phyllomedusa bicolor, part., *Günth. Cat.* p. 120.
Rana bicolor, *Boddaert, Monogr. de Rana bicol.* f. 1–5, *and Schrift. der Berl. Naturf.* ii. p. 459; *Shaw, Nat. Misc.* x. p. 367, *and Zool.* iii. p. 126.
Calamita bicolor, *Schneid. Hist. Amph.* p. 156; *Merr. Tent.* p. 170.
Hyla bicolor, *Latr. Rept.* ii. p. 174; *Daud. Rain.* p. 22, pls. 5 & 6, *and Rept.* viii. p. 40; *Spix, Spec. Nov. Test. Ran.* p. 42, pl. 13; *Gravenh. Delic.* p. 26; *Cuv. R. A.*; *Guérin, Iconogr. Rept.* pl. 26. f. 3.
Phyllomedusa bicolor, *Wagl. Syst. Amph.* p. 201.
—— bicolor, part., *Tschudi, Batr.* p. 70; *Dum. & Bibr.* p. 629, pl. 90. f. 2.
—— scleroderma, *Cope, Proc. Ac. Philad.* 1868, p. 112.

Tongue entire. Vomerine teeth in two oblique groups between the choanæ. Snout longer than the diameter of the eye, truncate; loreal region slightly oblique; interorbital space much broader than the upper eyelid; tympanum one half or two thirds the diameter of the eye. Fingers free, first shorter than second, fourth a little shorter than third; toes free, first and second equal; disks of fingers as large as the tympanum, of toes rather smaller; inner metatarsal tubercle not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the tympanum. Upper surfaces studded with bony deposits; parotoids distinct, large; belly and lower surface of thighs granulate. Blue-green above; lower surfaces purplish white; small, white, purple-edged spots along the sides of the body and limbs; a narrow, white, purple-edged line along the outer side of forearm and tarsus; fingers purplish, the tips blue. Male with a subgular vocal sac. Size very large.

Guianas; Brazil.

a–b. ♀.	Demerara Falls.	
c. ♂.	Brazil.	Sir A. Smith [P.].
d. ♂.	—— ?	

7. Phyllomedusa vaillantii. (Plate XXIX. fig. 2.)

Tongue entire. Vomerine teeth in two small oblique groups between the choanæ. Snout a little longer than the diameter of the eye, obliquely truncated from behind forwards; loreal region oblique, very concave; interorbital space a little broader than the upper eyelid; tympanum half the diameter of the eye. Fingers

free, first shorter than second, fourth a little shorter than third; toes free, first considerably longer than second; disks of fingers and toes much smaller than the tympanum; metatarsal tubercle indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the posterior corner of the eye. Upper surfaces studded with bony deposits; parotoids distinct, short, not extending beyond the vertical of the angle of the jaws; chest, belly, and inferior surface of thighs granulate. Blue-green above; sides of limbs and body purple, minutely spotted with whitish; a narrow, white, black-edged line along the outer side of forearm and tarsus; fingers light greenish; lower surfaces brownish white, with a few white spots on the throat and chest. Male with a subgular vocal sac. From snout to vent 60 millim.

Brazil. Named in honour of Professor Léon Vaillant.

a. ♂. Santarem. H. A. Wickham, Esq. [P.].

8. Phyllomedusa tarsius.

Pithecopus tarsius, *Cope, Proc. Ac. Philad.* 1868, p. 113.

Tongue openly emarginate behind. Vomerine teeth in two transverse groups on a level with the anterior edge of the choanæ. Snout longer than the diameter of the eye; upper lip somewhat projecting; loreal region slightly oblique; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers and toes free; first toe much longer than second; digital dilatations of hand largest, a little larger than the tympanum. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Skin minutely granular above, with a few flat glands on the back; beneath granulate, except under the arms, legs, and tarsi, the granules very large and flat on the pectoral region; parotoid stratum of crypts distinct, extending from orbit to sacrum. Blue-green above, purplish on gular and thoracic regions; femur green, except below; two external digits of the same colour; sides with small whitish spots; a few whitish spots on lower surfaces. Size large.

Upper Amazon.

a–b. ♀ & hgr. Pebas. H. W. Bates, Esq. [C.].

9. Phyllomedusa burmeisteri.

Phyllomedusa bicolor, part., *Günth. Cat.* p. 120.
Phyllomedusa bicolor, *Burmeister, Erläuter. zur Fauna Brasil.* p. 111, pl. 32; *Cope, Proc. Ac. Philad.* 1868, p. 112.

Tongue entire. Vomerine teeth in two oblique groups between the choanæ. Snout longer than the diameter of the eye, obliquely truncated from behind forwards; loreal regions oblique; interorbital space broader than the upper eyelid; tympanum about half the diameter of the eye. Fingers free, first shorter than second,

Phyllomedusa iheringii, Blgr.

a-f. ♂♀ S. Lorenzo, Rio Grande do Sul.
Ihering (Types)

g-h. ♂♀ Sta. Catharina Michaëlis.

ii (?) ♀ Col. Alpina, Theresopolis. Göldi

k. Hgs. Blumenau, Sta. Catharina. Henkel.

n-o. ♂♀ Porto Real, Prov. Rio Janeiro. Hard

fourth nearly as long as third; toes free, first longer than second; disks of fingers and toes much smaller than the tympanum; inner metatarsal tubercle not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum or the eye. Upper surfaces smooth or minutely granulate; parotoids very distinct, large; belly and lower surface of thighs granulate. Blue-green above; sides of body and limbs generally with large white, purple-edged spots; a narrow white purple-edged line along the outer side of forearm and tarsus; fingers purplish brown, the tips white; purplish brown beneath, with or without white spots. Male with a subgular vocal sac.

S. America.

a. ♀.	Rio Janeiro.	Mrs. Fry [P.].
b–d. ♂ ♀.	Brazil.	Dr. Gardiner [P.].
e, f–g. ♂, ♀, & yg.	Brazil.	
h. Yg.	Brazil.	Lord Stuart [P.].
~~*i*. ♀.~~	~~Oran Salta, Buenos Ayres.~~	~~E. W. White, Esq. [C.].~~
k. ♀.	Brazil.	H. W. Bates, Esq. [C.].
l–m. Hgr.	Brazil.	

10. Phyllomedusa sauvagii. (Plate XXIX. fig. 3.)

Well distinguished from the preceding by the coloration and short parotoids. These are very prominent, and commence upon the upper eyelids, a great part of which is covered by them; the length of the parotoid equals about the distance from its anterior border to the tip of the snout. Blue-green above and beneath, except on the granulate regions; a white streak round the lower lip, extending along each side of the body to the level of the nasal region; a few large white spots on the thoracic region and on the sides of the belly; a large white spot on the heel; a light line along the outer edge of the tarsus and outer toe. From snout to vent 75 millim.

Buenos Ayres. Named in honour of Dr. H. E. Sauvage, Paris Museum.

a, b. ♂ ♀.	Oran Salta.	E. W. White, Esq. [C.].

11. Phyllomedusa cœlestis.

Pithecopus cœlestis, *Cope, Proc. Ac. Philad.* 1874, p. 121.

Differs from *P. burmeisteri* in the absence of any trace of a parotoid gland and the narrower interorbital space, the width of which equals that of the upper eyelid. Blue-green above; sides with irregular white spots; beneath brownish, with a few white spots.

Peru.

a–b. ♂ ♀.	Moyobamba.	A. H. Roff, Esq. [C.].

12. Phyllomedusa tomopterna.

Pithecopus tomopternus, *Cope, Proc. Ac. Philad.* 1868, p. 112.

Vomerine teeth in two small fascicles opposite the anterior part of the choanæ. Form elongate. Snout not quite vertical in profile; loreal region elevated, plane; tympanum one third the diameter of the eye. Fingers and toes free; first toe longer than second. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the orbit. Parotoids indistinct; a dermal fold on lower arm, strong on elbow; a weak one on tarsus, terminating above in two heel processes, one projecting inwards and one outwards. Above green, below with hands and feet yellow; outer fingers and toes bound with purple, like the concealed surfaces; no brown margin inside lower lip. Size small.

Upper Amazon.

13. Phyllomedusa hypochondrialis.

Phyllomedusa bicolor, part., *Günth. Cat.* p. 120.
Hyla hypochondrialis, *Daud. Rain.* p. 29, pl. 10. f. 1, *and Rept.* viii. p. 60; *Gravenh. Delic.* p. 28.
Calamita hypochondrialis, *Merr. Tent.* p. 170.
Phyllomedusa bicolor, part., *Dum. & Bibr.* p. 629.
—— hypochondrialis, *Cope, Proc. Ac. Philad.* 1862, p. 355; *Peters, Mon. Berl. Ac.* 1871, p. 404.
Pithecopus hypochondrialis, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86, *and Proc. Ac. Philad.* 1868, p. 112.
Phyllomedusa azurea, *Cope, Proc. Ac. Philad.* 1862, p. 355.
Pithecopus azureus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 86, *and Proc. Ac. Philad.* 1868, p. 112.

Tongue entire. Vomerine teeth none. Snout as long as the diameter of the eye, truncate; loreal region nearly vertical; inter-orbital space a little broader than the upper eyelid; tympanum not half the diameter of the eye. Fingers free, first shorter than second, fourth nearly as long as third; first toe longer than second; disks of fingers and toes rather small; inner metatarsal not prominent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches generally the hinder edge of the eye. Skin smooth above, granulate beneath; parotoids scarcely distinct. Light purplish or blue above; upper lip white-edged; upper surface of arms colourless; a narrow bluish band along the thigh; concealed portions of limbs and sides of body with vertical purplish-brown bands; beneath whitish, immaculate. Male with a subgular vocal sac. Size of *Hyla arborea*.

S. America.

a–b. ♂ ♀.	Berbice.	
c–e. ♂ ♀.	British Guiana.	
f. ♀.	Dutch Guiana.	Sir A. Smith [P.].
g. Hgr.	Pernambuco.	W. A. Forbes, Esq. [P.].
h. ♀.	Santarem.	H. A. Wickham, Esq. [C.].

a. *Phyllomedusa perlata*, Blgr.
Jg. Yarimaguas Hahnel.
(Type)

k. ♀ Asuncion, Paraguay. Bohls.

Tripsiron spatulatus, Fthr.

a, b-c. ♀ Presidio, W. Mexico. Forrer (Types)

10. TRIPRION.

Pharyngodon, *Cope, Proc. Ac. Philad.* 1865, p. 193.
Triprion, *Cope, Proc. Ac. Philad.* 1866, p. 127, *and Journ. Ac. Philad.* (2) vi. 1866, p. 85.

Pupil erect. Tongue subcircular, scarcely free behind, entire. Vomerine teeth, and a series of parasphenoidal teeth. Head a bony casque, with projecting labial borders. Tympanum distinct. Fingers with a slight rudiment of web; toes webbed, the tips dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; sternum a cartilaginous plate. Diapophyses of sacral vertebra strongly dilated.

Yucatan.

1. Triprion petasatus.

Pharyngodon petasatus, *Cope, Proc. Ac. Philad.* 1865, p. 193.
Triprion petasatus, *Cope, Proc. Ac. Philad.* 1866, p. 127, *and Journ. Ac. Philad.* (2) vi. 1866, pl. 25. f. 7 & 8.

Upper view of head.

Lateral view of head.

Open mouth.

Vomerine teeth in two small groups between the choanæ; parasphenoidal teeth in a simple series. Head entirely bony, rough; snout quite flat, projecting far beyond the mouth-opening, the latter being very inferior; canthus rostralis and superciliary ridges forming an elevated ridge; hinder edge of casque straight, raised; tympanum half the diameter of orbit. Fingers with a slight rudiment of web; toes short, two-thirds webbed: disks smaller than the tympanum; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the shoulder and the eye. Skin smooth above, granulate beneath. Brownish above, spotted with darker; head with white punctuations; whitish beneath, immaculate. Male with an external subgular vocal sac; during the breeding-season the inner side of the first finger covered with blackish rugosities.

Yucatan.

a–b. ♂.	Yucatan.	M. G. A. Boulenger [P.].
c–d. ♀.	Yucatan.	

9. PELOBATIDÆ.

Discoglossidæ, part., Asterophrydidæ, Alytidæ, part., Bombinatoridæ, part., *Günth. Cat. Batr. Sal.*

Asterophrydidæ and Scaphiopodidæ, part., *Cope, Nat. Hist. Rev.* 1865.

Asterophrydidæ, Pelodytidæ, Scaphiopodidæ, *Cope, Journ. Ac. Philad.* (2) vi. 1866.

Bombinatoridæ, part., Alytidæ, part., Discoglossidæ, part., *Mivart, Proc. Zool. Soc.* 1869.

Pelobatidæ and Asterophrydidæ, *Lataste, Actes Soc. Linn. Bord.* xxx. p. 339.

Upper jaw toothed; diapophyses of sacral vertebra strongly dilated; no ribs; terminal phalanges simple.

The coracoids and precoracoids are more or less strongly curved. The omosternum is constantly present, but small and cartilaginous. The sternum is a cartilaginous plate, or a bony style with cartilaginous disk.

The vertebræ are procœlian in most of the genera; in *Megalophrys*, and perhaps also in *Asterophrys*, they are opisthocœlian, as in the *Discoglossidæ* and *Aglossa*. But, in this case, this character does not seem to be of such importance as was believed by some authors. It has been noticed that, in some individuals of various species, the intervertebral spheres do not become firmly attached to either centrum at maturity *; and one adult specimen of *Xenophrys monticola* in the British Museum exhibits a very anomalous mode of articulation, the fourth vertebra being biconcave, the fifth biconvex, the others procœlian.

A fronto-parietal fontanelle is present in *Pelodytes*, absent in the other genera.

The pupil is vertically elliptic.

Synopsis of the Genera.

I. Coccyx and sacrum confluent; toes extensively webbed.

Sternum a cartilaginous plate; tympanum present.
1. **Scaphiopus**, p. 433.

Sternum with a bony style; tympanum absent.
2. **Pelobates**, p. 437.

II. Sacral vertebra with two condyles for articulation with coccyx; toes nearly free or very shortly webbed.

Sternum with a bony style; vomerine teeth on a level with the front edge of the choanæ; diapophyses of sacral vertebra extremely dilated ..... 3. **Pelodytes**, p. 438.

Sternum without bony style; vomerine teeth in a long transverse series behind the choanæ ..... 4. **Batrachopsis**, p. 439.

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* *Cf.* Dugès, 'Recherches sur l'Ostéologie et la Myologie des Batraciens,' and Cope, Journ. Ac. Philad. (2) vi. 1866, p. 67.

III. Sacral vertebra articulated to coccyx by one condyle; toes free or very shortly webbed.

Vomerine teeth none; sternum with a bony style; vertebræ procœlian ..... 5. **Leptobrachium**, p. 440.

Vomerine teeth; sternum with a bony style; vertebræ procœlian. 6. **Xenophrys**, p. 441.

Vomerine teeth; sternum with a bony style; vertebræ opisthocœlian; upper eyelid prolonged into a horn. 7. **Megalophrys**, p. 442.

Vomerine teeth; tongue entirely adherent; vertebræ opisthocœlian (?) ..... 8. **Asterophrys**, p. 443.

1. SCAPHIOPUS.

Scaphiopus, *Holbr. N.-Amer. Herp.* i. p. 85; *Tschudi, Batr.* p. 83; *Dum. & Bibr.* viii. p. 471; *Günth. Cat.* p. 38; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. p. 81.
Spea, *Cope, Journ. Ac. Philad.* (2) vi. p. 81.

Pupil erect. Tongue subcircular or oval, entire or slightly nicked, and free behind. Vomerine teeth in two small groups. Tympanum more or less distinct, or hidden. Fingers generally with a rudiment of web; toes webbed; tips of fingers and toes not dilated. Inner metatarsal tubercle shovel-shaped; outer metatarsals separated by web. Omosternum cartilaginous, rudimentary; sternum a cartilaginous plate. Vertebræ procœlian; sacral vertebra with rather strongly dilated diapophyses, confluent with coccyx.
N. America; Mexico.

Synopsis of the Species.

I. Derm of head involved in cranial ossification.

A round gland on each side of the thorax, near the axilla ..... 1. *solitarius*, p. 434.
No pectoral gland; canthus rostralis obsolete; loreal region oblique ..... 2. *couchii*, p. 434.
No pectoral gland; canthus rostralis strong; loreal region nearly vertical . 3. *rectifrenis*, p. 435.

II. Derm of head free from cranial ossification.

1. Eustachian tubes moderate.

Vomerine teeth between the choanæ; tympanum distinct ..... 4. *hammondii*, p. 435.
Vomerine teeth between the choanæ; tympanum concealed or scarcely visible; skin nearly smooth above..... 5. *bombifrons*, p. 435.
Vomerine teeth on a level with the hinder edge of the choanæ; tympanum concealed ..... 6. *dugesii*, p. 436.

Vomerine teeth on a level with the hinder edge of the choanæ; a large gland in the upper integument of tibia ..... 7. *multiplicatus*, p. 436.

2. Eustachian tubes exceedingly minute, much smaller than the choanæ ..... 8. *stagnalis*, p. 436.

1. Scaphiopus solitarius.

Scaphiopus solitarius, *Günth. Cat.* p. 38.

Scaphiopus solitarius, *Holbr. N.-Amer. Herp.* i. p. 85, pl. 12, & 2nd edit. iv. pl. 27; *Tschudi, l. c.*; *Dum. & Bibr.* p. 473; *Leconte, Proc. Ac. Philad.* vii. 1855, p. 429; *Brocchi, Bull. Soc. Philom.* (7) iii. 1879, p. 23, *and Miss. Sc. Mex., Batr.* p. 23, pl. 9. f. 3.

Rana holbrookii, *Harlan, Med. Res.* p. 105.

Scaphiopus holbrookii, *Baird, Rep. Expl. Surv.* iv. *Rept.* 1859, pl. 28. f. 1; *Cope, Proc. Ac. Philad.* 1863, p. 54.

Tongue subcircular or oval, nicked behind. Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Snout rounded, with indistinct canthus rostralis; nostril nearer the tip of the snout than the eye: interorbital space as broad as, or a little broader than, the upper eyelid: upper surface of head bony, rough; tympanum distinct, half the width of the eye. Fingers short, with a rudiment of web, first a little longer than second: toes short, webbed to the tips; subarticular tubercles indistinct; three metacarpal tubercles: metatarsal shovel longer than first toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the tympanum. Skin of back minutely tubercular, of sides more coarsely; a small, rounded, prominent parotoid gland: a small, rounded, porous gland on each side of the thorax near the axilla: beneath nearly smooth. Brownish or olive above, marbled with darker; edge of the metatarsal shovel black. Male with a subgular vocal sac, and during the breeding-season black rugosities on the inner side of the first two fingers.

United States.

a. ♂.	Charleston.	P. L. Sclater, Esq. [P.].
b. ♂.	N. America.	E. Doubleday, Esq. [P.].
c. Skeleton.	United States.	

2. Scaphiopus couchii.

Scaphiopus couchii, *Baird, Proc. Ac. Philad.* vii. 1855, p. 62, *and U.S. & Mex. Bound. Surv.* ii. 1859, *Rept.* p. 28, pl. 35. f. 1-6; *Cope, Proc. Ac. Philad.* 1863, p. 52; *Brocchi, Miss. Sc. Mex., Batr.* p. 26.

—— varius, *Cope, l. c.* p. 52; *Brocchi, l. c.* p. 27.

Tongue subcircular, slightly emarginate. Vomerine teeth between the choanæ or opposite their posterior border. Snout prominent; canthus rostralis obsolete: upper surface of head bony,

e. ♂♀ Cambridge, Mass. Mus. Comp. Zool.
g. ♂♀ Key West, Florida "
(var. alba, Farw.).

a-l. ♀ & yg. Presidio, W. Mexico. Forrer.
g-m. ♂ & yg. Duval Co, Texas. Taylor.
n, o. ♀
p-u. ♂♀ (caught in axillary amplexus) ♂♂.
Duval Co., Texas. Taylor.

rugose: tympanum concealed or distinct. Toes fully webbed: cuneiform shovel elongate. Skin tuberculous, sometimes rather smooth; abdomen slightly rugose; parotoid flat. Yellowish or yellowish olive above, with brown bars.

Tamaulipas; Rio Grande; Lower California.

3. Scaphiopus rectifrenis.

Scaphiopus rectifrenis, *Cope, Proc. Ac. Philad.* 1863, p. 53; *Brocchi, Miss. Sc. Mex., Batr.* p. 27.

Vomerine teeth in closely approximate fasciculi behind the choanæ. Snout prominent, truncate in profile: canthus rostralis strong; loreal region nearly vertical: upper surface of head bony, rough; tympanum concealed. Skin of head and body sparsely tuberculous; parotoids rather lateral; a weak antepectoral fold. Above brown or brownish grey, the tubercles tipped with brown: a brown line extends from each eye to sacrum, converging posteriorly.

Tamaulipas; Coahuila.

4. Scaphiopus hammondii.

Scaphiopus hammondii, *Baird, Rep. Expl. Surv.* iv. *Rept.* 1859, pl. 28. f. 2; *Cope, Proc. Ac. Philad.* 1863, p. 53.
Spea hammondii, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Tongue very large, entire. Vomerine teeth in transverse series between the choanæ. Snout somewhat truncate, perpendicular in profile; region of canthus rostralis concave: tympanum distinct, one fourth the extent of the eye. Metatarsal shovel produced. Skin roughly tuberculous, especially on the sides, thick on the occiput: parotoid flat, small: beneath nearly smooth. Colour above stone-brown, with traces of two paler dorsal bands; tubercles fulvous-tipped; extremities shaded with the same: below whitish, immaculate.

California.

5. Scaphiopus bombifrons.

Scaphiopus bombifrons, *Cope, Proc. Ac. Philad.* 1863, p. 53.
Spea bombifrons, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Tongue entire. Vomerine teeth in oblique fasciculi or short series between the choanæ. Snout truncate, elevated, thickened transversely; canthus rostralis replaced by a concavity: tympanum concealed or scarcely visible. Palmation of toes deeply repand; metatarsal shovel produced. Skin nearly smooth, roughest on the sides; parotoid flat, small. Pale ashen or brown above, with numerous plumbeous vermiculations: outer border of tarsus and foot light; a dark spot on canthus rostralis.

Fort Union, Missouri; Platte River; Texas.

6. Scaphiopus dugesii.

Scaphiopus dugesi, *Brocchi, Bull. Soc. Philom.* (7) iii. 1879, p. 23, *and Miss. Sc. Mex., Batr.* p. 94, pl. 9. f. 4.

Tongue subcircular, entire. Vomerine teeth in two small groups on a level with the hinder edge of the choanæ. Head small; snout rounded, rather prominent, without canthus rostralis; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; upper surface of head smooth; tympanum concealed. Fingers short, with or without a slight rudiment of web, first longer than second; toes short, the web considerably emarginate and extending only as a fringe to the tip of the fourth toe; subarticular tubercles indistinct; two metacarpal tubercles: metatarsal shovel as long as first toe. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder. Head and back tubercular: limbs and inferior surfaces smooth: a curved fold above the tympanum; parotoids indistinct. Olive above, spotted or marbled with darker: metatarsal shovel black. Male with a subgular vocal sac, and, during the breeding-season, black rugosities on the inner side of the first two fingers.

Mexico.

a–b. ♂ ♀. Mexico.

7. Scaphiopus multiplicatus.

Scaphiopus multiplicatus, *Cope, Proc. Ac. Philad.* 1863, p. 52; *Brocchi, Miss. Sc. Mex., Batr.* p. 25.

Spea multiplicata, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Tongue entire. Vomerine teeth in two fasciculi opposite posterior margins of choanæ. Head very short; snout thick, rounded; tympanum covered by a portion of the parotoid gland anterior to this. Metatarsal tubercle rather short, very prominent. Skin of upper surfaces coarsely tuberculous, that of the crown thick, of the extremities nearly smooth; parotoid very large, extending beyond scapula, bent upon the side, bounded inferiorly by a strong fold, which extends to the groin; below this, on the sides, are two or more others; from the eye a strong fold passes posterior to the angle of the mouth and across the gular region; a large gland occupies most of the length of tibia; abdomen minutely, pubic region coarsely, rugose. Above ashy brown, below yellowish ash.

Mexico.

8. Scaphiopus stagnalis.

Spea stagnalis, *Cope, Yarrow's Rep. V. Zool.* p. 525, pl. 25. f. 6–8.

Tongue round, entire. Vomerine teeth between the choanæ, either anteriorly or posteriorly. Eustachian tubes exceedingly minute, much smaller than the choanæ. Snout projecting beyond mouth; nostrils terminal; tympanum concealed. Web of hind foot reaching middle of longest toe; tarsal shovel large. The hind limb being

m. ♂ Draney. Seine et Oise. Parâtre.
n. Several larvæ. Prague. Frutsch.
o " Halle/S. Wolterstorff.
p.s. " Sjælland. Copenhagen Mus.
t-u. " Fr. Basle. F. Müller.
v-y. ♂♀ Szamos-Ujvar, Transylvania. Méhely.
z-bb. ♂♀ Magdeburg. Wolterstorff.
cc-dd. ♂♀ in copula. Paris. Hérow-Royer.
ee-ff. ♂♀ Milan Cornalia.
gg. Spawn. Magdeburg. Wolterstorff.

carried forwards along the body, the tibio-tarsal articulation reaches the middle of the parotoid gland. The latter flat and thin. Colour light brown, with a few dark speckles; a spot on canthus rostralis.

New Mexico.

2. PELOBATES.

Pelobates, *Wagl. Syst. Amph.* p. 206; *Tschudi, Batr.* p. 83; *Dum. & Bibr.* viii. p. 475; *Günth. Cat.* p. 40; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Cultripes, *Müller, Tiedem. Zeitschr. Phys.* iv. p. 212, *and Isis*, 1832, p. 336; *Cope, Journ. Ac. Philad.* (2) vi. p. 81.

Didocus, *Cope, l. c.*

Pupil erect. Tongue circular, slightly nicked and free behind. Vomerine teeth in two small groups. No tympanum. Fingers free; toes extensively webbed, the tips not dilated. Outer metatarsals separated by web. Inner metatarsal tubercle shovel-shaped. Omosternum cartilaginous, rudimentary; sternum with a bony style. Vertebræ procœlian; diapophyses of sacral vertebra very strongly dilated; sacral and coccygeal vertebræ confluent.

Europe.

1. Pelobates fuscus.

Pelobates fuscus, *Günth. Cat.* p. 40.

Rösel, Hist. Ran. p. 69, pls. 17–19.

Bufo fuscus, *Laur. Syn. Rept.* pp. 28 & 122; *Schneid. Hist. Amph.* p. 196; *Latr. Rept.* ii. p. 109; *Daud. Rain.* p. 81, pl. 80. f. 1, *and Rept.* viii. p. 161; *Cuv. R. A.*; *Merr. Tent.* p. 187.

Rana fusca, *Meyer, Syn. Rept.* p. 10; *Sturm, Deutschl. Faun.* iii. Heft 1; *Gravenh. Delic.* p. 32.

—— alliacea, *Shaw, Zool.* iii. p. 146, pls. 41 & 42.

Bombina marmorata, *Koch, l. c.*; *Hahn, Faun. Boic.* pl. 21. f. b.

Bombinator fuscus, *Fitz. l. c.*

Pelobates fuscus, *Wagl. l. c.*; *Bonap. Icon. Faun. Ital.*; *Tschudi, l. c.*; *Dum. & Bibr.* p. 477; *Fatio, Vert. Suisse*, iii. p. 376; *Schreiber, Herp. Eur.* p. 90; *De Betta, Faun. Ital., Rett. Anf.* p. 71; *Leydig, An. Batr.* p. 77; *Lessona, Atti Ac. Linc., Mem. Cl. Sc.-fis. &c.* i. p. 1077, pl. 3.

Cultripes minor, *Müller, Isis*, xxv. p. 538.

Pelobates insubricus, *Cornal. Atti Soc. Vent. Tent.* ii. p. 44.

Vomerine teeth in two straight or slightly oblique series between the choanæ. Snout rounded, without canthus rostralis; fronto-parietal region bony, rough, convex. First and second fingers equal; toes entirely webbed; tips of fingers and toes pointed; no subarticular tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the shoulder or the angle of the mouth. Skin smooth. Brown above, marbled with darker; metatarsal spur yellowish brown. Male without vocal sac, with a large elliptic gland on the upperside of the arm.

Central Europe.

a–b. ♀ & hgr.	Hanover.	Dr. J. E. Gray [P.].
c–d. ♂.	Paris.	
e–f. Yg.	Paris.	
g. Skeleton.	Bondy.	
h. ♂.	Nantes.	
i. Larva.	Bologna.	Prof. J. J. Bianconi [P.].

2. Pelobates cultripes.

Pelobates cultripes, *Günth. Cat.* p. 41.
Rana cultripes, *Cuv. R. A.*
Cultripes provincialis, *Müller, Isis*, xxv. 1832, p. 538.
Bombinator fuscus, *Dugès, Rech. Ostéol. Batr.*
Pelobates cultripes, *Tschudi, l. c.*; *Dum. & Bibr.* p. 483; *Schreib. Herp. Eur.* p. 92; *Lataste, Herp. Gir.* p. 263.
? Didocus calcaratus, *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 81.

Closely allied to the preceding species, from which it differs in the following points:—Fronto-parietal region flat: temporal region bony, rough, the orbit being completely enclosed. Metatarsal spur black.

France; Spain and Portugal.

a. ♀. France.

3. PELODYTES.

Pelodytes, (*Fitz.*) *Bonap. Faun. Ital.*; *Dum. & Bibr.* viii. p. 460; *Günth. Cat.* p. 35; *Cope, Nat. Hist. Rev.* 1865, p. 108, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.
Obstetricans, sp., *Dugès, Rech. Ostéol. Batr.*
Alytes, sp., *Tschudi, Batr.* p. 84.

Pupil erect. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two small groups. Tympanum slightly distinct. Fingers free, toes webbed at the base, the tips not dilated. Outer metatarsals separated by web. Omosternum cartilaginous; sternum with a bony style. Vertebræ procœlian; diapophyses of sacral vertebra very strongly dilated, with two condyles for articulation with coccyx.

Western Europe.

1. Pelodytes punctatus.

Pelodytes punctatus, *Günth. Cat.* p. 35.
Rana punctata, *Daud. Rain.* p. 51, pl. 16. f. 11, *and Rept.* viii. p. 100.
—— plicata, *Daud. Rain.* p. 53, *and Rept.* p. 102; *Cuv. R. A.*
—— daudinii, *Merr. Tent.* p. 177.
Obstetricans punctatus, *Dugès, l. c.*
Alytes punctatus, *Tschudi, l. c.*
Pelodytes punctatus, (*Fitz.*) *Bonap. l. c.*; *Dum. & Bibr.* p. 463; *Fatio, Vert. Suisse*, iii. p. 353; *Schreib. Herp. Eur.* p. 99; *De Betta, Faun. Ital., Rett. Anf.* p. 68; *Lataste, Herp. Gir.* p. 242; *Bouleng. Bull. Soc. Zool. France*, 1881, p. 73.
—— daudini, *Bosca, Bull. Soc. Zool. France*, 1880, p. 255.

Vomerine teeth in two short transverse series on a level with the front edge of the choanæ. Snout subacuminate, with moderately

m.	Larvæ.	Paris.	Héron Royer.
o.	♂	Breslau.	Bunleger
v.	♂	Berlin.	"
t.	♂	Neudorf, nr. Basle.	Basle Mus.
y.	♂♀	Halle/s.	Wolterstorff.
y	♂	Turin.	Peracca.
	Hyr.	Sjalland.	Copenhagen Mus.
	♂♀ + hyr.	Magdeburg.	Wolterstorff.
	♂♀	Prater, Vienna.	Werner.
	♀	Turin.	Peracca.

b.	♂.	Nantes	Paris Museum.
c.	♂.	S. France.	Héron Royer.
d-e.	Larvæ	Herault.	"
f-k.	♂♀ + hyg.	Merida, Spain.	Bosca.
l.	♀	Abrantes, Portugal.	Graells.
m-n.	♂♀ in copula.	S. France.	Héron-Royer.
o-p.	Larvæ	Tondella, Portugal.	Bedriaga
q-s.	"	Coimbra.	
t.	♂	Seville	Calderon.

Pelobates syriacus, Blgr.

c.	Larvæ.	Nr. Damascus.	Barrois.
	♂♀. (Dies.)	Smyrna.	Christeva.
		Haifa, Syria.	Senckenb. Mus.

f. ♂♀ & yg. St Malo. Boulenger.
g. " Paris Héron Royer
h-i. ♀ Castino, Piedmont. Peracca.
k. Larva. Cimiez, nr Nice. Bedriaga.
l. ♂ Nr St. Malo. Boulenger.
m-n. ♂♀ in copula. Paris. Hérow-Royer.
o. Eggs. Nice. Bedriaga.
p.p. ♂ Seville Calderon.

distinct canthus rostralis; tympanum much smaller than the eye. Fingers and toes rather slender; first finger shorter than second; toes webbed at the base and fringed, the fringe being greatly developed in the breeding male: subarticular tubercles rather indistinct; three palmar tubercles; a very small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or between the eye and the tip of the snout. Upper surfaces with smooth flat warts; a glandular fold above the tympanum; an angular fold on each side of the breast near the arm, connected with its fellow by a very distinct cross fold: lower belly and under surface of thighs granular. Greyish or olive above, with small green spots: a rather indistinct X-shaped light figure on the front part of the back: lower surfaces white, immaculate. Male with a subgular vocal sac: during the breeding-season, the chin, the granules of the belly, and the lower surface of the toes with blackish rugosities: five pairs of rugose blackish plates—one on the side of the breast, one on the lower side of the breast, one on the inner side of the forearm, and one on each of the two inner fingers.

France: Spain and Portugal; Piedmont; Liguria.

a. ♂.	Paris.	M. G. A. Boulenger [P.].
b. ♀.	Nantes.	
c–d. Hgr.	France.	Paris Museum.
e. Many spec., ♂ ♀.	Valencia, Spain.	Lord Lilford [P.].

4. (BATRACHOPSIS.) // Lechriodus.

Pupil erect. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in a long transverse series behind the choanæ. Tympanum distinct. Fingers free; toes slightly webbed at the base, the tips not dilated. Outer metatarsals slightly separated. Omosternum cartilaginous; sternum a small cartilaginous plate. Vertebræ procœlian; sacral vertebra with rather strongly dilated diapophyses, and two condyles for articulation with coccyx.

New Guinea.

Lechriodus.

1. (Batrachopsis) melanopyga.

Asterophrys melanopyga, *Doria, Ann. Mus. Civ. Genov.* vi. 1874, p. 355, pl. 12. f. K: *Peters & Doria, cod. loc.* xiii. 1878, p. 417.

Vomerine teeth in a strong, transverse, straight or slightly arched, scarcely interrupted series just behind the choanæ, not extending outwards beyond the latter. Head large: snout rounded, with angular canthus rostralis and very oblique loreal region; interorbital space as broad as the upper eyelid; tympanum more or less distinct, vertically oval, its vertical diameter three fourths the width of the eye. Fingers slender, first and second equal; toes slender, webbed at the base, the tips slightly swollen; subarticular tubercles strong; a small, blunt, inner metatarsal tubercle. The hind limb being

carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper parts more or less distinctly granulate; a strong fold from the posterior corner of the eye to the side of the body; a few other, narrower, curved, symmetrical folds along the back; lower parts smooth. Brown above, indistinctly maculated with darker; a streak on canthus rostralis and below outer glandular fold, and another across the interorbital space, black; limbs regularly cross-barred with blackish; beneath yellowish or brownish. Male with an internal subgular vocal sac; during the breeding-season the inner side of the first two digits and of the strong metacarpal tubercle covered with black spines. In the female the two inner fingers are lobate, as in many *Limnodynastes*.

New Guinea.

a. ♀.	Mount Arfak.	Marquis J. Doria [P.].
b. ♂.	New Guinea.	

5. LEPTOBRACHIUM.

Leptobrachium, *Tschudi, Batr.* p. 81; *Günth. Cat.* p. 36; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

Pupil erect. Tongue heart-shaped, free behind. Vomerine teeth none. Tympanum rather indistinct or hidden. Fingers free; toes webbed at the base, the tips not dilated. Outer metatarsals united. Omosternum cartilaginous, rudimentary; sternum with a bony style. Vertebræ procœlian; sacral vertebra with very much dilated diapophyses, and one condyle for articulation with coccyx.

E. Indies.

1. Leptobrachium gracile.

Leptobrachium gracile, *Günth. Proc. Zool. Soc.* 1872, p. 598.

Tongue very large, filling the entire cavity of the mouth. Snout rounded, as long as the greatest orbital diameter, with distinct canthus rostralis: nostril nearer the tip of the snout than the eye; interorbital space not quite so broad as the upper eyelid; tympanum visible, half the width of the eye. Fingers slender, first and second equal, third very much longer than the others: toes rather slender, slightly webbed: tips of fingers and toes blunt; subarticular tubercles indistinct; a small, elongate, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin perfectly smooth; a curved linear fold above the tympanum. Upper parts greyish olive: a whitish spot below the eye: upper arm and elbow whitish: hind limb with blackish cross bars; lower and lateral parts of the body and hind limb with rather large irregular black spots.

Borneo.

a. ♀.	Matang.	(Type.)

C. ♀ Aru Islands. Challenger Exped.

♀ Kina Balou Everett.
Yg. Paitan, N. Borneo. "

Leptobrachium pelodytoides, Blgr.

a. ♀ Karin hills. Fea. (Type)

g. ♂ Willis Mt., Java. v. Hasselt.

h. ♂ ♀ Pramasuh, Ulai Mt. S. E. Borneo. Fischer.
(Type of *L. montanum*)

i. Several larvæ. Larut, Perak. Anderson.

k. ♀ Palawan. Everett

l. Hyl. Singapore. Ridley.

Leptobrachium parvum, Blgr.

a-d. ♂♀ Karin hills. Fea (Types)

2. Leptobrachium hasseltii.

Leptobrachium hasseltii, *Günth. Cat.* p. 36.
Leptobrachium hasseltii, *Tschudi, l. c.*

Head rather large; snout rounded, as long as the greatest orbital diameter, with distinct canthus rostralis; nostril a little nearer the tip of the snout than the eye; interorbital space a little broader than the upper eyelid; tympanum very indistinct, half the width of the eye. Fingers moderate, first and second equal; toes very short, webbed at the base; tips of fingers and toes blunt; subarticular tubercles indistinct; a small, subcircular, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the angle of the mouth. Skin of back distinctly, of belly indistinctly granular. Brownish or olive above, spotted with black; hind limbs cross-barred with black. Male with a subgular vocal sac.

E. Indies.

a–c. Yg.	Pegu.	W. Theobald, Esq. [C.].
d. Hgr. (very bad state).	Birmah.	W. Theobald, Esq. [C.].
e. ♀.	East Indies.	
f. ♂.	Java.	Dr. Bleeker.

6. XENOPHRYS.

Xenophrys, *Günth. Rept. Brit. Ind.* p. 414; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

Pupil erect. Tongue subcircular, slightly nicked and free behind. Vomerine teeth in two small groups. Tympanum scarcely distinct. Fingers free: toes nearly free, the tips not dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous: sternum with a bony style. Vertebræ procœlian: sacral vertebra with strongly dilated diapophyses, and one condyle for articulation with coccyx.

Mountains of India.

1. Xenophrys monticola.

Xenophrys monticola, *Günth. Rept. Brit. Ind.* p. 414, pl. 26. f. H: *Anderson, Proc. Zool. Soc.* 1871, p. 200.
—— gigas, *Jerdon, Proc. As. Soc.* 1870, p. 85.

Vomerine teeth in two small groups a little behind the choanæ. Head much depressed: snout very short, truncated, with angular canthus rostralis and deeply concave loreal region: interorbital space broad, slightly concave: tympanum slightly distinct, vertically oval, about two thirds the width of the eye. First finger not extending beyond second: toes with a rudiment of web: tips of fingers and toes slightly swollen; subarticular and metatarsal tubercles indistinct. The hind limb being carried forwards along the body, the tibio-

tarsal articulation reaches the eye, the tip of the snout, or a little beyond the latter. Skin smooth or minutely tubercular above; generally a V-shaped linear raised fold on the nape. Olive-brown above; a dark, light-edged, triangular spot between the eyes; generally one or two other angular markings on the back; generally a dark band along each side of the head: hind limbs cross-barred; throat and breast marbled with brown. Male with two internal vocal sacs.

Himalayan Region; Birmah.

a. Hgr.	Sikkim.	Messrs. v. Schlagintweit [C.]. (Type of *Xenophrys monticola*.)
b–g. Hgr.	Sikkim.	T. C. Jerdon, Esq. [P.].
h. Many spec.: ♂, ♀, hgr., & yg.	Darjeeling.	T. C. Jerdon, Esq. [P.].
i–m. Hgr.	Darjeeling.	T. C. Jerdon, Esq. [P.].
n. Yg.	Khassia.	Sir W. Hooker [P.].
o. Hgr.	Pegu.	W. Theobald, Esq. [P.].

7. MEGALOPHRYS.

Megalophrys, *Kuhl*, *Bull. Soc. Nat.*; *Wagl. Syst. Amph.* p. 204; *Tschudi, Batr.* p. 82; *Dum. & Bibr.* viii. p. 456; *Günth. Cat.* p. 36; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

Ceratophryne, *Günth. Cat.* p. 136.

Pupil erect. Tongue subcircular, indistinctly nicked and free behind. Vomerine teeth in two small groups. Tympanum hidden. Fingers free: toes slightly webbed, the tips not dilated into regular disks. Outer metatarsals united. Omosternum cartilaginous; sternum with a bony style. Vertebræ opisthocœlian; sacral vertebra with strongly dilated diapophyses, and one condyle for articulation with coccyx.

E. Indies.

1. Megalophrys montana.

Megalophrys montana, *Günth. Cat.* p. 36.

Megalophrys montana, (*Kuhl*) *Wagl. Syst. Amph.* p. 204; *Tschudi, Batr.* p. 82; *Dum. & Bibr.* p. 458; *Cantor, Cat. Mal. Rept.* p. 140; *Günth. Rept. Brit. Ind.* p. 413, *and Ann. & Mag. N. H.* (4) xi. p. 419.

Ceratophrys montana, *Schleg. Abbild.* t. x. f. 3.

Vomerine teeth in two small groups a little behind the choanæ. Head much depressed; snout very short, truncated, with angular canthus rostralis and deeply concave loreal region; interorbital space very broad, slightly concave. First finger not extending beyond second; toes webbed at the base; tips of fingers and toes blunt or slightly swollen; subarticular and metatarsal tubercles indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the angle of the mouth or a little beyond. Skin with scattered conical warts; upper eyelid tubercular, produced into

Leptobrachium carinense, Blgr.

d. ♂♀ Karin hills. Fea (Types)

Megalophrys longipes, Blgr.

♀ Perak, North of Malacca, 3,300 feet. (Gray. Type.)

♀ Perak, "

Megalophrys fea, Blgr.

b. Ad. Kakhien Hills. Fea.

l. Ad.		Kina Balu.	Everett.
m. Hyp.		Balabac.	"
n.s. Ad.		Palawan.	"

f-g.	♂ ♀	Sumatra.	Forbes.
h.	♀	Kinta, Perak.	Wray.
i.	♀	Mt. Dulit, Borneo.	Hose.
k. Yg.		Spitzau "	Everett
l. m. ♀ & hyp.		Kina Balu, 3000 ft.	"
n. Yg.		Paka Paka " 10,000 ft.	"
o-p. ♂ & Yg.		Kina Balu	"
q. ♀		St. Natuna I?	"

a horn-like appendage; a narrow, raised glandular fold on each side of the back; similar, oblique folds across the hind limbs; lower surfaces granular. Olive-brown above, with a large triangular blackish spot between the eyes; a blackish oblique bar below the eye; limbs cross-barred; lower surfaces light brown, marbled with darker. Male without vocal sac.

E. Indies.

a. ♀.	Java.	Leyden Museum.
b, *c*. ♂ ♀.	Java.	
d. ♀.	Java.	Mr. H. O. Forbes [C.].
(This specimen bears a slight dermal appendage on the tip of the snout.)		
e. Skeleton.	Java.	
f. ♂.	Java?	Dr. Bleeker.
g. ♀.	Sumatra.	Hr. Carl Bock [C.].
h–*i*. Hgr.	Dinagat Island.	Mr. Everett [C.].
k. Hgr.	Ceylon.	

2. Megalophrys nasuta.

Ceratophryne nasuta, *Günth. Cat.* p. 36.
Megalophrys montana, *Cantor, Cat. Mal. Rept.* p. 140.
Ceratophryne nasuta, *Schlegel. Handb. Dierk.* ii. p. 57, pl. 4. f. 72.
Megalophrys montana, part., *Günth. Rept. Brit. Ind.* p. 413.
—— chysii, *Edeling, Tydschr. Dierk.* 1864, p. 205, *and Natuurk. Tydschr. Nederl. Ind.* 1864, xxvii. p. 265.
—— nasuta, *Günth. Ann. & Mag. N. H.* (4) xi. p. 419.

Very closely allied to the preceding species, from which it differs in the greater length of the palpebral horn-like appendage, and especially in the presence of a similar appendage on the tip of the snout. In full-grown individuals the skin becomes entirely adherent to the skull, and the skin of the back is hardened by bony deposits, thus bearing great analogy to the dorsal shield of several species of *Ceratophrys*. This occurs also, but to a lesser degree, in the preceding species.

E. Indies.

a. Yg.	Sumatra.	Sir A. Smith [P.].
b–*c*. ♀.	Matang.	
d. Yg.	Sarawak.	Mr. Everett [C.].
e. ♂.	Pinang.	Dr. Cantor's Collection.

8. ASTEROPHRYS.

Asterophrys, *Tschudi, Batr.* p. 82; *Günth. Cat.* p. 37; *Cope, Nat. Hist. Rev.* 1865, p. 107, *and Journ. Ac. Philad.* (2) vi. 1866, p. 80.

Tongue large, entirely adherent. Vomerine teeth numerous, forming a curved line on the external border of the vomers. Tympanum hidden. Fingers and toes free (*Tschudi*). Vertebræ opisthocœlian; one sacral condyle for articulation with coccyx (*Cope*).

New Guinea.

1. Asterophrys turpicola.

Asterophrys turpicola, *Günth. Cat.* p. 37.
Asterophrys turpicola, (*Müll.*) *Tschudi, l. c.*
Ceratophrys turpicola, *Schleg. Abbild.* p. 30, pl. 10. f. 4.

Head very large, angular; upper edge of the eyelid with several dermal appendages. Extremities moderate. Dark brown above; lower surfaces lighter, marbled with darker.

New Guinea.

The following genus must evidently be referred to this family: but the characters given are insufficient to ascertain its place:—

Ranaster, Macleay, Proc. Linn. Soc. N.S. Wales, ii. 1878, p. 135.

"Habit rather stout. Head large and rounded. Legs rather short. Fingers and toes tapering and slightly webbed, with tubercular pads on the carpal and tarsal bones. Skin smooth. Maxillary teeth conspicuous, acute, bicuspid, and sub-distant. Vomerine teeth conspicuous and sub-distant, situated on a long, straight, transverse ridge, sharply divided in the middle. Inner nostrils rather large and in front of the vomerine ridge. Tongue largely notched behind. Tympanum distinct. Sacral vertebra dilated. No parotoids."

R. convexiusculus, Macleay, l. c. p. 136.—Katow, N. Guinea.

10. DISCOGLOSSIDÆ.

Discoglossidæ, part., Alytidæ, part., Bombinatoridæ, part., *Günth. Cat. Batr. Sal.*; *Mivart, Proc. Zool. Soc.* 1869.
Discoglossidæ, *Cope, Nat. Hist. Rev.* 1865, *and Journ. Ac. Philad.* (2) vi. 1866.
Discoglossidæ and Alytidæ, *Lataste, Rev. Intern. Sc.* 1878, ii. p. 488, *and Actes Soc. Linn. Bord.* xxx. p. 339.

Upper jaw toothed: diapophyses of sacral vertebra dilated: short ribs articulated to the anterior diapophyses.

In the presence of ribs and the opisthocœlian vertebræ, the members of this very natural family closely approach the higher Tailed Batrachians. In their larval state they are also well distinguished by having the spiraculum situated mesially on the thoracic region, whilst in all the other *Phaneroglossa* it is situated on the left side.

The sternal apparatus is the same in all four genera, and remarkable for the shape of the sternum, which forms two slender postero-exteriorly diverging styles.

The coccyx is furnished at its base with posteriorly diverging diapophyses. In *Bombinator* it is attached to one condyle; in the other genera there are two condyles.

A more or less extensive fontanelle is present. *Bombinator* and *Alytes*, and perhaps also *Liopelma*, have true ossa nasalia.

Synopsis of the Genera.

Tympanic disk present, slightly distinct or concealed; diapophyses of sacral vertebra moderately dilated; pupil triangular.
1. **Discoglossus**, p. 445.

No tympanic disk; tongue adherent; diapophyses of sacral vertebra strongly dilated; pupil triangular .... 2. **Bombinator**, p. 446.

No tympanic disk; tongue free behind; diapophyses of sacral vertebra feebly dilated; pupil triangular.
3. **Liopelma**, p. 447.

Tympanum distinct: diapophyses of sacral vertebra moderately dilated; pupil elliptical, erect ..... 4. **Alytes**, p. 448.

1. DISCOGLOSSUS.

Discoglossus, *Otth, Neue Denkschr. Allgem. schweiz. naturf. Ges.* i. p. 6; *Tschudi, Batr.* p. 80; *Dum. & Bibr.* viii. p. 422; *Günth. Cat.* p. 35; *Cope, Nat. Hist. Rev.* 1865, p. 105, *and Journ. Ac. Philad.* (2) vi. 1866, p. 76.
Pseudis, sp., *Gené, Syn. Rept. Sard.* p. 24.
Colodactylus, *Tschudi, Faun. Per., Herp.* p. 68.

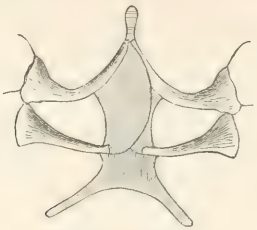
Pupil triangular. Tongue circular, entire, scarcely free behind. Vomerine teeth. Tympanum slightly distinct or concealed. Fingers free; toes webbed, the tips not dilated. Outer metatarsals separated by web. A rudimentary omosternum; sternum two slender diverging cartilaginous styles; diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.
S. Europe; N.W. Africa.

1. Discoglossus pictus.

Discoglossus pictus, *Günth. Cat.* p. 35.
Cetti, Anf. e Pesc. Sard. iii. p. 38.
Rana temporaria, *Rozet, Voy. Alg.* i. p. 230.
Discoglossus pictus, *Otth, l. c.* f. 1–8; *Tschudi, l. c.*; *Bonap. Faun. Ital.*; *Dum. & Bibr.* p. 425; *Strauch, Mém. Ac. Sc. St. Pétersb.* (7) iv. no. 7, p. 77; *De Betta, Rett. Anf. Grec., Atti Inst. Venet.* xiii. p. 77; *Steindachn. Novara, Amph.* p. 28; *De Betta, Faun. Ital. Rett. Anf.*, p. 67; *Schreiber, Herp. Eur.* p. 112; *Camerano, Atti Ac. Tor.* xiv. p. 443, f. 6–8; *Lataste, Actes Soc. Linn. Bord.* xxxiii. p. 275, pls. 3, 4, 5.
—— sardus, *Tschudi, l. c.*; *Bonap. l. c.*; *Camerano, l. c.* p. 437, f. 4–5.
Pseudis sardoa, *Gené, l. c.* pl. v. f. 1–3, 5–6.
Rana picta, *Schleg. l. c.*
? Colodactylus cærulescens, *Tschudi, Faun. Per., Herp.* p. 68, pl. 11. f. 2; *Peters, Mon. Berl. Ac.* 1873, p. 414, pl. 3. f. 1.
Discoglossus scovazzii, *Camerano, Atti Ac. Tor.* xiii. p. 548, & xiv. p. 447, f. 1–3.

Vomerine teeth in a long, scarcely interrupted, straight series across the palate behind the choanæ. Snout rather prominent, longer than the greatest orbital diameter, without canthus rostralis; interorbital space as broad as, or a little narrower than, the upper

eyelid; tympanum generally hidden, sometimes slightly distinct. First finger shorter than second; three metacarpal tubercles, the inner very much developed in males; toes nearly entirely webbed in



Sternal apparatus.

the latter, at the base only in females; subarticular tubercles indistinct; a single, small, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye, or between the eye and the tip of the snout. Skin smooth, or with small flat marks on the upper surfaces. Brownish or olive above, with dark light-edged spots, sometimes confluent into broad longitudinal bands along the head and back; sometimes three light longitudinal dorsal stripes. Male without vocal sac; during the breeding-season there are black rugosities on the chin, on the inner metacarpal tubercle, on the inner digit, and on the free border of the web between the toes.

S. Europe; N.W. Africa.

a–d. ♂ ♀.	—— ?	Dr. Heckel.
e. ♂.	Sardinia.	Leyden Museum.
f–h, i. ♂, ♀, & hgr.	Coruña, Spain.	Don V. L. Seoane [C.].
k–l. ♂.	Malta.	Miss E. Attersoll [P.].
m. Hgr.	Malta.	Capt. Feilden [P.].
n. ♂.	Algiers.	P. L. Sclater, Esq. [P.].
o. ♀.	Algiers.	
p, q. ♀ & hgr.	Tunis.	P. L. Sclater, Esq. [P.].

2. BOMBINATOR.

Bombinator, sp., *Merr. Tent. Herp.* p. 179.
Bombinator, *Wagl. Syst. Amph.* p. 206; *Tschudi, Batr.* p. 84; *Dum. & Bibr.* viii. p. 485; *Günth. Cat.* p. 41; *Cope, Nat. Hist. Rev.* 1865, p. 105, *and Journ. Ac. Philad.* (2) vi. 1866, p. 76.

Pupil triangular. Tongue circular, entire, adherent. Vomerine teeth. No tympanum: eustachian tubes generally very minute. Fingers free; toes webbed, the tips not dilated. Outer metatarsals separated by web. No omosternum; sternum two slender diverging cartilaginous styles. Diapophyses of sacral vertebra strongly dilated. Terminal phalanges simple.

Europe; Asia.

Discoglossus pictus

τ-ν. ♂♀ in copula. Algiers. Heron Royer.
(Types of *D. auritus*)

φ. yg. Oasis of Old Biskra Werner.
Several specs., ♂♀ Malta. Douglass.
χ. Larvæ Coimbra Bedriaga.
♂ skel. Malta. Douglass.

λ-ω. ♂♀ Giglio. Florence Mus.
ν-ω Hgr. Sartene, Corsica. " "
χ. Larvæ Algeria. Héron Royer.
γ-α ♂♀ Sierra Morena Bocá.
β-η. Hgr. & yg. Ciudad Real. "
ι-κ ♂♀ Coimbra. Gadow.
ε-μ. Hgr. & yg. Corsica. Dollfus
" ♀ Tangiers. Bouchet
ξ-γ. Hgr. & yg. Between Mogador & Morocco.
α. ♂ Senckenberg Mus.
Oporto. Gadow.
γ. ♂ Flensen. Anderson.
ε. Hgr. & yg. Algiers. "
λ ♂♀ & yg. Hammam R'irha "
Hgr. ♂ Hammam Meskoutine. "
π Larva. Algiers. Bedriaga.
ρ " Montecristo Lataste
ν ♂♀ in copula. Algiers. (Types of *D. auritus*) Heron Royer.

Bombinator igneus Laur.

a. Several spees. Berlin. Boulenger.
♂ ♀ & yg.
b. Several spees. ♂ ♀ yg. Magdeburg. Wolterstorff.
c. Hgr. Ammendorf, nr. Halle/s "
d-g. ♂ ♀ Prague. Fritsch.
h-k. Ad. Vienna Hochstetter
l. n. ♂ ♀ Kullen, Christianstadt. Lilljeborg
m-q. ♂ ♀ yg. Sjælland. Copenhagen Mus.
r-t. ♂ ♀ Leignitz, Silesia. Wolterstorff.
u. ♂ Prater, Viennia. Werner.
v-z. Tadpoles. Magdeburg. Héron Royer
a'-f' " Sjælland. Copenhagen Mus.
g'-h' ♂ ♀ in copula Magdeburg. Héron Royer.
i'-k' ♂ ♀ Holics, Com. Neutra. Hungary. Méhely.

Bombinator pachypus Bp.

~~?. u. ♂. S. E. Coast of Corea. Magpie~~
o. Lr. Trance. Héron Royer.
p. ♀ Frankfort, Maine Boettger
q. ♀ Tiefurt, nr. Eisenach, Wolterstorff
r-t. ♂ Starnberger See, nr. Munich. "
u-w. ♂ ♀ yg. S. Rombedis, S. Tyrol. De Betta
x. Several spees. ♂ ♀ Maccellise, Verona. "
y-z. ♂ Florence. Florence Mus.
α-β ♂ ♀ Basle. Basle Mus.
γ-δ. Many spees., ♂ ♀ yg, and larvæ.
Mondorf, Luxemburg. Boulenger.
ε-ζ. ♀ Trieste. Werner
η. ♀ Hütteldorf, nr. Viennia. "
θ. Many spees., ♂ ♀ yg. Parnassus. Krüper
ι-κ ♂ Agenton, Indre. Paratre
λ. ♂ Pontlevoy, Loir et Cher. "

Cont? next page.

~~bombinus~~ pachypus.

1. Bombinator ~~igneus~~.

Bombinator igneus, *Günth. Cat.* p. 41.

(*Rösel, Hist. Ran.* p. 97, pls. 22 & 23.
(Rana bombina, *Linn. Faun. Suec.* p. 101, *and S. N.* p. 355 ; *Sturm, Deutschl. Faun.* iii.
(Bufo igneus, *Laur. Syn. Rept.* pp. 29 & 129 ; *Schneid. Hist. Amph.* p. 187 ; *Latr. Rept.* ii. p. 110 ; *Griff. An. Kingd.* ix. p. 401.
Rana ignea, *Shaw, Zool.* iii. p. 116, pl. 35.
Bufo bombinus, *Daud. Rain.* p. 75, pl. 36, *and Rept.* viii. p. 146 ; *Schinz, Faun. Helvet.* p. 145.
Bombinator igneus, *Merr. l. c.* ; *Gravenh. Delic.* p. 67 ; *Cuv. R. A.* ; *Tschudi, l. c.* ; *Bonap. Faun. Ital.* ; *Dum. & Bibr.* p. 487 ; *Fatio, Vert. Suisse,* iii. p. 368 ; *Schreiber, Herp. Eur.* p. 95 ; *De Betta, Faun. Ital., Rett. Anf.* p. 70 ; *Lataste, Herp. Gir.* p. 275 ; *Leydig, An. Batr.* p. 50 ; *Bedriaga, Zool. Anz.* 1879, p. 664.
—— bombina, *Wagl. Syst.* p. 206.
—— brevipes. *Blasius, Wirbelth.*
—— pachypus, (*Fitz.*) *Bonap. Faun. Ital.*

Vomerine teeth in a short interrupted series behind the choanæ. Habit stout. Snout short, rounded. First finger shorter than second ; two metacarpal tubercles ; toes more or less webbed ; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the shoulder and the eye. Skin strongly warty above, smooth, or nearly so, below. Olive above, ~~sometimes elegantly marbled with black (spec. *h* m.)~~ ; beneath orange, marbled with black. Male without vocal sac ; during the breeding-season the inner side of the forearm, of the inner metacarpal tubercle, and of the two inner fingers furnished with black rugosities ; two small patches of same under the second and third toes.

Europe ; Asia.

a. ♂.	Goslar.	Prof. Peters [P.].
b. Yg.	Hanover.	Dr. J. E. Gray [P.].
c. ♀.	France.	
d, *e*, *f*. ♀.	Europe.	
~~*g*. Many spec., ♂ ♀.~~	~~Chefoo.~~	~~R. Swinhoe [C.].~~
~~*h* m. ♂ ♀~~	~~China.~~	~~—— Adams, Esq. [C.].~~

3. LIOPELMA.

Liopelma, (*Fitzing.*) ~~Steindachn.~~ *Verh. zool.-bot. Ges. Wien,* xi. 1861, p. 218.

Pupil triangular. Tongue circular, entire, free behind. Vomerine teeth. No tympanum nor eustachian tubes. Fingers free ; toes webbed, the tips not dilated. Outer metatarsals separated by web. No omosternum ; sternum two slender diverging cartilaginous styles. Diapophyses of sacral vertebra feebly dilated. Terminal phalanges simple.

New Zealand.

1. Liopelma hochstetteri.

Liopelma hochstetteri, (*Fitz.*) *Steindachn. l. c.* pl. 6, *and Novara, Amph.* p. 33.

Vomerine teeth behind the level of the choanæ, in two short series, slightly oblique towards front. Habit of *Alytes obstetricans*. Head large, not one third total length; snout rounded; canthus rostralis distinct, very short; interorbital space a little broader than the upper eyelid. Fingers short, blunt, first shorter than second; toes short, blunt, about half webbed; two flat metacarpal tubercles; a small, flat, inner metatarsal tubercle; subarticular tubercles of fingers and toes indistinct. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the eye. Upper surfaces with small smooth tubercles; lower surfaces smooth. Brown; limbs and lower surfaces lighter; head and back indistinctly spotted with blackish; limbs regularly cross-barred with blackish. Male without vocal sac.

New Zealand.

a. ♂. New Zealand. Sir A. Smith [P.].

4. ALYTES.

Bombinator, sp., *Merr. Tent.* p. 179.
Alytes, *Wagl. Syst. Amph.* p. 206; *Tschudi, Batr.* p. 84; *Dum. & Bibr.* viii. p. 465; *Günth. Cat.* p. 38; *Cope, Nat. Hist. Rev.* 1865, p. 105, *and Journ. Ac. Philad.* (2) vi. 1866, p. 76.
Ostetricans, sp., *Dugès, Rech. Ostéol. Batr.*
Ammoryctis, *Lataste, C. R. Ac. Paris,* 1879, p. 983.

Pupil elliptical, erect. Tongue circular, entire, scarcely free behind. Vomerine teeth. Tympanum distinct. Fingers free, toes webbed at the base, the tips not dilated. Outer metatarsal separated by web. No omosternum; sternum two slender diverging cartilaginous styles. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges simple.

Europe.

1. Alytes obstetricans.

Alytes obstetricans, *Günth. Cat.* p. 38.
Bufo obstetricans, *Laur. Syn. Rept.* pp. 28 & 128; *Bronyn. Bull. Soc. Philom.* an. viii. p. 91, pl. 6. f. 4; *Latr. Sal.* p. 40, *and Rept.* ii. p. 112; *Daud. Rain.* p. 87, pl. 32. f. 1, *and Rept.* viii. p. 176; *Cuv. R. A.*
Rana campanisona, *Laur. l. c.* pp. 30 & 133.
—— obstetricans, *Wolf, Sturm's Deutschl. Faun.* iii. Heft 4.
Bombinator obstetricans, *Merr. Tent.* p. 179; *Gravenh. Delic.* p. 68.
Alytes obstetricans, *Wagl. l. c., and Icon. Amph.* t. 22. f. 3–5; *Schinz, Faun. Helvet.* p. 145; *Tschudi, Isis,* 1837, p. 702, *and Batr.* p. 84; *Bonap. Faun. Ital.*; *Dum. & Bibr.* viii. p. 467; *Fatio, Vert. Suisse,*

Bombinator orientalis Blgr.

a. many specs., ♂♀. Chefoo. Swinhoe.
b-f. ♂♀ N. China. Adams.
g. ♂. S. E. Coast of Corea. 'Magpie.'
h-k. ♂♀ Chabarowka. Fischer.
l. m. ♂♀ Jan-pa Kyöng, Corea. Campbell.

(3 types.)

Bombinator pachypus (cont?)

n-q. Larvæ. Niederfellendorf, Francouia Wolterstorff.
r. Larva. Gironde. Lataste.
s-t. ♂♀ in copula. France. Héron-Royer.
u-v. ♂♀ Schemnitz, Hungary. Méhelÿ.
w-x. many specimens, ♂, ♀, yg. & larvæ. Freiburg, Baden. Boulenger.

u-x. Larvæ. Freiburg i. B. Bedriaga
y-a' " Bonn. "
b'-g' " Lac Bleu, nr. Cauteret
Pyrennees, 6500 ft. Joubin
h' ♀ Paris Hérob-Royer.
i' k' Larvæ. St. Germain en Laye. Paris. Boulenger.
l' yy. Hoelgoat, Finistere. Thomas.
m'-n' ♂ with ggs. Paris. Deyrolle.

k. several larvæ. Paris. Boulenger.
l-n. ♂ ♀ Jura. Linè Roth.
o. ♀ skeleton several spees. Paris Latastè.
p-q. ♂ Mondorf, Luxemburg. Boulenger.
r-s. ♂ Hameln, on the Weser. Wolterstorff.
t. Larva Ballaigues, Switzerland. Bedriaga

var. boscà

α-β. Larvæ. Comma. Sevane.
γ-δ " Serra Estrella. Gadow.
ε, ζ. Many spees., ad., ♂♀., & larvæ Valencia. Boscá.
η-κ Larvæ Coimbra Bedriaga

a-c. Ad. Merida Boscá
d-g. Larvæ Serra Morena " "

iii. p. 358; *Schreiber, Herp. Eur.* p. 102; *Lataste, Herp. Gir.* p. 249; *Leydig, An. Batr.* p. 64.
Obstetricans vulgaris, *Dugès, Rech. Ostéol. Batr.*
Alytes obstetricans delislei, *Lataste, Rev. Intern. Sc.* 2nd year, p. 543.

Vomerine teeth in a straight, interrupted line behind the choanæ. Habit stout. Snout rounded. Head about one third total length. Tympanum two thirds the width of the eye. First finger shorter than second, which equals fourth; three metacarpal tubercles; toes short, webbed at the base, fringed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tympanum. Skin of upper surfaces warty; a small parotoid, sometimes indistinct; a more or less distinct large gland in the upper integument of forearm and of tibia; belly granular. Olive-grey above, dotted and spotted with darker. Male without vocal sac.

France, Switzerland, Belgium, W. Germany.

a–c. ♂ & eggs.	Paris.	
d–e. ♂?	Bonn.	Dr. A. Günther [P.].
f. ♀ & eggs.	—— ?	Sir A. Smith [P.].

VAR. **boscæ.**

Alytes obstetricans boscai, *Lataste, Rev. Intern. Sc.* 2nd year, p. 543, *and Actes Soc. Linn. Bord.* xxxiv. pl. 11. f. 3–5.

Head larger, more than one third total length. Spots larger, more distinct.

Spain, Portugal.

g. ♂.	Valencia, Spain.	Lord Lilford [P.].
h–i. ♂.	Porto.	E. Allen, Esq.

2. Alytes cisternasii.

Alytes cisternasi, *Bosca, An. Soc. Esp.* viii. 1879, p. 217.
Ammoryctis cisternasi, *Lataste, C. R. Ac. Paris,* 1879, p. 983; *Bosca, An. Soc. Esp.* x. 1881, pl. 2. f. 1–6.

Differs from *A. obstetricans* chiefly in the following characters:— Habit stouter still. Interorbital space broader. Fourth finger shorter than first. Two metacarpal tubercles. Tibio-tarsal articulation not reaching the tympanum. Skin nearly smooth above.

Spain.

11. AMPHIGNATHODONTIDÆ.

Both jaws toothed: diapophyses of sacral vertebra dilated.

But in the presence of teeth in the lower jaw, the unique genus of this family agrees in all important characters with the *Hylidæ*, and particularly the genus *Nototrema*.

1. AMPHIGNATHODON.

Pupil horizontal. Tongue subcircular, indistinctly nicked, and slightly free behind. Vomerine teeth. Fingers free; toes webbed, the tips dilated into large disks. Outer metatarsals united. Female with a dorsal pouch, as in *Nototrema*. No omosternum; sternum a cartilaginous plate. Diapophyses of sacral vertebra strongly dilated. Terminal phalanges claw-shaped.

Ecuador.

This genus differs from any other of the tailless tribe in having the lower jaw furnished with teeth, which are exactly the same as those of the upper jaw. In *Hemiphractus* and *Ceratohyla* the mandibular teeth are quite different, and must rather be considered odontoids than true teeth. In *Amphodus* they are very strong and few in number. But in the present genus the teeth of the lower as well as of the upper jaw are small, elongated, closely set—in fact exactly the same as those of the upper jaw of the toothed Batrachians.

1. Amphignathodon guentheri. (Plate XXX.)

Vomerine teeth in two oblique series commencing from the inner posterior corner of the choanæ. Head much broader than long, bony, rough, the derm involved in the cranial ossification; snout extremely short, vertically truncate; canthus rostralis angular; crown deeply concave; interorbital space broader than the upper eyelid; tympanum smaller than the eye, turned backwards. Fingers slender, first a little shorter than second, the tips dilated into large disks; toes half webbed, the disks smaller than those of fingers; subarticular tubercles moderate. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin finely tubercular above, granulate on the belly and under the thighs; upper eyelid with a pointed dermal appendage; heel with a dermal spur. Olive above, the borders of the dorsal pouch black; a few whitish dots on the head and the sides of the body; a black, white-edged streak along each side of the body; upper surface of thighs whitish, with numerous black cross bars, which are broader than the interspaces between them; arms and legs with rather indistinct cross bars; beneath light greyish brown. From snout to vent 75 millim.

Ecuador.

a. ♀. Intac. Mr. Buckley [C.].

The following genus should perhaps enter this family:—

Grypiscus, Cope, Journ. Ac. Philad. (2) vi. 1867, p. 205.

"Mandible with a series of caducous pleurodont teeth, and a prominent elevated tooth on each side the symphysis. Prefrontal bones fully developed, in contact with each other throughout, and

with fronto-parietals. Auditory apparatus well developed; tongue broad, entire, little free. Vomerine teeth; no parotoid glands.

"The mandibular teeth are obtuse, and scarcely project above the alveolar margin; their attachment appears to be the mucous membrane only, on which account they are readily scraped away.

"Xiphisternum [sternum, nobis] an emarginate cartilaginous shield. Toes webbed."

G. umbrinus, Cope, *l. c.* p. 206.—Rio Janeiro.

12. HEMIPHRACTIDÆ.

Hemiphractidæ, *Cope, Journ. Ac. Philad.* (2) vi. 1866.
Ranidæ, part., *Mivart, Proc. Zool. Soc.* 1869.

Both jaws toothed; diapophyses of sacral vertebra not dilated.

The sternal apparatus of *Hemiphractus* and *Ceratohyla* has been figured by M. J. de la Espada. The coracoids and precoracoids are parallel, and the epicoracoid cartilage is remarkable for its great width.

According to Dr. Brocchi, the vertebræ are opisthocœlian in *Hemiphractus*, and the coccyx is attached to two condyles.

The same author, having studied the structure of the mandibular teeth of *Hemiphractus*, expresses the opinion that these must be considered odontoids rather than true teeth.

Synopsis of the Genera.

Vomers and palatines toothed; tips of fingers and toes not dilated into regular disks ..... 1. Hemiphractus, p. 451.

Vomers and palatines toothed; tips of fingers and toes dilated into regular disks ..... 2. Ceratohyla, p. 453.

Palatines and parasphenoid toothed; tips of fingers and toes dilated into regular disks ..... 3. Amphodus, p. 455.

1. HEMIPHRACTUS.

Hemiphractus, *Wagler, Isis*, 1828, p. 743; *Cope, Journ. Ac. Philad.* (2) vi. 1866, p. 88; *Espada, Jorn. Sc. Lisb.* iii. p. 62.
Hemiphractus, sp., *Peters, Mon. Berl. Ac.* 1862, p. 145.

Pupil horizontal. Tongue entire or slightly nicked, and slightly free behind. Teeth on the vomers and palatine bones. Head large, helmet-shaped; orbit completely enclosed. Tympanum distinct. Fingers with a rudiment of web; toes webbed at the base; tips of fingers and toes not dilated into regular disks. Outer metatarsals united. Omosternum rudimentary; sternum a cartilaginous plate. Terminal phalanges simple.

South America.

1. Hemiphractus scutatus.

Rana scutata, *Spix, Spec. Nov. Test. Ran.* p. 28, pl. 4. f. 2.
Hemiphractus spixii, *Wagl. Isis*, p. 743, pl. 10. f. 1–2, *and Syst. Amph.* p. 204.
—— scutatus, *Peters, Mon. Berl. Ac.* 1862, p. 146, pl. 1.

Tongue subcircular, a little longer than broad. Anterior vomerine teeth not longer than the others. Snout twice the length of the orbit; nostrils close together, equally distant from the eye and the tip of the snout; interorbital space nearly four times broader than the space between the nostrils; hinder edge of the helmet strongly curved; the distance from one of the posterior extremities of the helmet to the other equals about twice and one third the distance from one orbit to the other; profile of the upper lip curved; tympanum much larger than the eye, a vertical oval obliquely directed forwards and upwards. Fingers short, first much longer than second; toes short, webbed at the base; subarticular tubercles scarcely prominent; a single, scarcely prominent, metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches nearly the eye. Skin of back smooth; sides and belly with large tubercles; a few scattered tubercles on the throat and breast; three rows of tubercles across the calf; a small triangular dermal flap at the tip of the snout; upper eyelid produced in a horn-like dermal appendage; a few small tubercles on the knee and on the heel. Greyish brown above; head uniform above; a black, light-edged triangular spot below the eye, confluent with a streak of same colour extending from the eye to the end of the helmet; back and sides and upper surface of thighs marbled with dark brown; arms, legs, and tarsi with narrow dark cross bars; hinder side of thighs and lower surface of tarsi blackish brown; round blackish-brown spots on the inner side of the legs; lower surfaces brown; a line on the middle of the throat and the tubercles on the belly white.

Para; Ecuador.

a. ♂ ? Ecuador. Mr. Buckley [C.].

2. Hemiphractus divaricatus.

Hemiphractus divaricatus, *Cope, Proc. Ac. Philad.* 1868, p. 114.
? Hemiphractus scutatus, *Espada, Jorn. Sc. Lisb.* iii. p. 62, *and Viaj. Pacif., Vertebr.* pl. 5. f. 1; *Brocchi, Ann. Sc. Nat.* (6) v. art. 7, pl. 16.

The frog figured by Espada and Brocchi is evidently different from the true *H. scutatus* figured by Peters; it appears to be the same as that described by Cope under the name *H. divaricatus*.

The helmet is broader, with more divergent outlines, and its hinder edge is but slightly curved; the distance between each posterior extremity of the helmet is greater if compared to the width of the interorbital space. Espada describes and figures the tongue as reniform, broader than long.

Colombia; Ecuador.

2. CERATOHYLA.

Hemiphractus, sp., *Peters, Mon. Berl. Ac.* 1862, p. 145.
Cerathyla, *Espada, Jorn. Sc. Lisb.* iii. p. 63.

Pupil horizontal. Tongue entire, slightly free behind. Teeth on the vomers and palatine bones. Head large, helmet-shaped; orbit completely enclosed. Tympanum distinct. Fingers with an indistinct rudiment of web; toes webbed at the base; tips of fingers and toes dilated into regular disks. Outer metatarsals united. Omosternum rudimentary; sternum a cartilaginous plate. Terminal phalanges claw-like.

Ecuador.

Synopsis of the Species.

I. Upper eyelid produced into a horn-like dermal appendage; snout with a long dermal appendage ..... 1. *proboscidea*, p. 453.

II. Upper eyelid rounded, tubercular; snout with a short dermal appendage.

1. Tibio-tarsal articulation not reaching beyond the tip of the snout.

Tongue circular; the distance from the extremity of one of the lateral processes of the helmet to the other equals its distance from the tip of the snout ..... 2. *bubalus*, p. 453.
Tongue longer than broad; hinder edge of the helmet strongly curved ..... 3. *fasciata*, p. 454.
Tongue broader than long; hinder edge of the helmet slightly curved..... 4. *palmarum*, p. 455.

2. Tibio-tarsal articulation reaching beyond the tip of the snout .... 5. *braconnieri*, p. 455.

1. Ceratohyla proboscidea.

Cerathyla proboscidea, *Espada, Jorn. Sc. Lisb.* iii. p. 64, *and Viaj. Pacif., Vertebr.* pl. 5. f. 2.

Tongue longer than broad. Snout with a long, compressed, bifid, dermal appendage; upper eyelid produced into a horn-like dermal appendage. Hinder edge of the helmet slightly curved. First finger longer than second; toes one-third webbed. Heel with a triangular dermal appendage.

Ecuador.

2. Ceratohyla bubalus.

Cerathyla bubalus, *Espada, Jorn. Sc. Lisb.* iii. p. 64, *and Viaj. Pacif., Vertebr.* pl. 5. f. 3.

Tongue circular. Anterior vomerine teeth longer than the others. Snout with a very short pointed dermal appendage; upper eyelid

rounded. Lateral processes of the helmet strongly diverging: the distance from the extremity of one of these processes to the other equals its distance from the tip of the snout, or more than three

Upper view of head.

times the width of the interorbital space, which is concave with prominent ridges: tympanum large, oval, entirely turned backwards, First finger longer than second: toes one-third webbed: subarticular tubercles not very prominent: a single metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Skin of back smooth, of belly closely, of throat sparsely, granular; a few conical tubercles on the head and limbs; a very short triangular dermal flap on the heel. Back brown; head and limbs greyish, the latter cross-barred with brown; hinder side of thighs grey, reticulated with blackish; lower surface of tarsi and soles blackish: lower surfaces dirty white, the belly and limbs reticulated with brown.

Ecuador.

a. ♀?	Canelos.	Mr. Buckley [C.].

3. Ceratohyla fasciata.

Hemiphractus fasciatus, *Peters, Mon. Berl. Ac.* 1862, p. 149, pl. 2.

Tongue longer than broad. Snout with a very short pointed dermal appendage; upper eyelid rounded. Lateral processes of the helmet slightly diverging: the distance from the extremity of one of these processes to the other equals its distance from the nostril, or not quite twice and a half the width of the interorbital space; hinder edge of the helmet strongly arched; tympanum large, oval, obliquely turned backwards. Limbs and body as in *C. bubalus*. Dark brown above, limbs cross-barred with blackish; hinder side of thighs reticulated with blackish; lower surfaces brown, white-spotted.

Ecuador.

a. ♂?	Canelos.	Mr. Buckley [C.].

4. Ceratohyla palmarum.

Cerathyla palmarum, *Espada, Jorn. Sc. Lisb.* iii. p. 64, *and Viaj. Pacif., Vertebr.* pl. 6. f. 1.

Similar to *C. fasciata*, but the tongue is broader than long, and the hinder edge of the helmet is but slightly arched.

Ecuador.

5. Ceratohyla braconnieri.

Cerathyla braconnieri, *Espada, ll. cc.* p. 64, & pl. 6. f. 2.

Resembles the two preceding species. The hind limbs are much longer, the tibio-tarsal articulation reaching beyond the tip of the snout. The shape of the helmet is intermediate between that of the two last species. Tongue circular.

Ecuador.

3. AMPHODUS.

Amphodus, *Peters, Mon. Berl. Ac.* 1872, p. 768.

Pupil horizontal? Tongue heart-shaped, slightly free behind. Teeth on the palatine bones and on the parasphenoid. Tympanum distinct. Fingers free; toes nearly free, the tips dilated into well-developed disks. Outer metatarsals united. Omosternum present.

Brazil.

1. Amphodus wuchereri.

? Hyla luteola, *Wied, Reise Bras.* i. p. 202, *and Beitr.* i. p. 535, *and Abbild.*

Amphodus wuchereri, *Peters, Mon. Berl. Ac.* 1872, p. 769, pl. 1. f. 1.

Mandibular teeth about eleven on each side, increasing in size towards the symphysis. Two large irregular transverse groups of closely-set teeth on the palatine bones; sphenoid with about five series of small teeth. Habit of a *Hylodes*. Snout short, pointed, prominent; canthus rostralis distinct though rounded; tympanum not quite half the diameter of the eye. Fingers rather short, first shorter than second; a slight web at the base of the three outer toes; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the middle of the tarsus marks the tip of the snout. Skin smooth above, granulate beneath; head slightly pitted. Chocolate-brown above; a well-defined yellow band on each side of the body, beginning from the upper eyelid, ending in a broad yellow supranal spot; head, and back between the lateral bands, and hind limbs spotted with yellow; beneath uniform yellowish white.

Bahia.

Suborder II. AGLOSSA.

Aglossa, Phaneroglossa, part., *Wagler, Syst. Amph.*
Phrynaglosses, *Dum. & Bibr. Erp. Gén.* viii.
Aglossa haplosiphona, *Günth. Cat. Batr. Sal.*
Aglossa, *Cope, Nat. Hist. Rev.* 1865.
Aglossa, Odontaglossa, *Cope, Check-list N.-Amer. Batr. & Rept., Bull. U.S. Nat. Mus.* i. 1877.

Eustachian tubes united into a single ostium pharyngium. No tongue.

The few members of this suborder have the vertebræ opisthocœlian and deprived of ribs; the diapophyses of the third and fourth vertebræ are extremely elongate, and those of the sacral are strongly dilated and confluent with the coccyx.

In *Pipa* there are only seven presacral vertebræ.

The fronto-parietals are entirely ossified, and there are true ossa nasalia.

The sternal apparatus belongs to the arciferous type, though the epicoracoid cartilages do not overlap.

The larvæ are provided with two spiracula, one on each side of the body.

13. DACTYLETHRIDÆ.

Dactylethridæ, *Hogg, Classif. Amph., Mag. N. H.* (n. s.) iii. 1839 (*name only*); *Günth. Cat.*; *Cope, Nat. Hist. Rev.* 1865; *Mivart, Proc. Zool. Soc.* 1869.

Upper jaw toothed.

1. XENOPUS.

Xenopus, *Wagl. Isis*, 1827, p. 726, *and Syst. Amph.* p. 199.
Dactylethra, *Cuv. Règne Anim.*; *Tschudi, Batr.* p. 55; *Dum. & Bibr.* viii. p. 762; *Günth. Cat.* p. 1.
Silurana, *Gray, Ann. & May. N. H.* 1864, xiv. p. 215.

Pupil round. Palate smooth. No tympanum. Fingers free; toes broadly webbed, the first three provided with a sharply-pointed nail. Outer metatarsals separated. Coracoids and precoracoids subequal, strongly divergent, connected by a double, not overlapping, cartilage; no omosternum; sternum a cartilaginous plate. Diapophyses of sacral vertebra very strongly dilated. Terminal phalanges pointed.

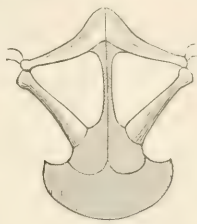
Tropical Africa.

1. Xenopus lævis.

Dactylethra lævis, *Günth. Cat.* p. 2.
Bufo lævis, *Daud. Rain.* p. 85, pl. 30. f. 1, *and Rept.* viii. p. 171.
Pipa lævis, *Merr. Tent.* p. 180.
—— bufonia, *Merr. l. c.*
Leptopus oxydactylus, *Mayer, Anal.* p. 34.

n. Larva.	Pt Elizabeth.	Leslie.
o-p, q-r. ♂♀	"	"
s. ♀, skel.	"	Spencer.
t. ♀		
u-v. Ys.	Zanzibar.	Sim.

Xenopus boiei, *Wagl. Isis*, 1827, p. 726, *and Syst. Amph.* p. 199.
Dactylethra capensis, *Cuv. R. A.*; *Dum. & Bibr.* p. 765, pl. 92. f. 1; *A. Dum. Arch. Mus.* x. pl. 18. f. 6; *Mansell Veale, Ann. & Mag. N. H.* (3) xvii. p. 391.
—— boiei, *Tschudi, Batr.* p. 90.
Xenopus lævis, *Steindachn. Novara, Amph.* p. 4.
Dactylethra lævis, *Blanf. Observ. Zool. Geol. Abyss.* p. 459.



Sternal apparatus.

Head small; snout short, rounded, without canthus rostralis; eyes and nostrils turned upwards; former small, their diameter equalling the distance between their front border and the nostril; upper eyelid reduced to a mere fold of the skin; a very short tentacle below the eye. Fingers very slender, acutely pointed, subequal in size; toes strong, depressed, pointed, very broadly webbed, the three inner furnished with black corneous sheaths imbedding the claws; no claw-like metatarsal spur; no subarticular tubercles. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the eye in females, the tip of the snout in males. Skin smooth, with more or less distinct tube-like lines round the body. Dark brown above; whitish beneath, immaculate or spotted with brown. The females distinguished in having three dermal flaps closing the vent.

Tropical Africa.

a. Yg.	Senafe, Abyssinia.	W. T. Blanford, Esq. [P.].
b. ♀.	Port Natal.	Rev. H. Calloway [P.].
c. ♀.	Port Natal.	T. Ayres, Esq. [C.].
d. Larvæ, many spec.	Kaffraria.	F. P. M. Weale, Esq. [P.].
e. ♂.	King-William's Town.	H. Trevelyan, Esq. [P.].
f–g. ♀.	Cape.	The Medical Officers of the Chatham Mus. [P.].
h. ♂.	Cape.	Sir A. Smith [P.].
i. Ad., stuffed.	Cape.	
k. ♀.	Orange River.	Dr. Kannemeyer [P.].
l–m. ♂ ♀.	S. W. Africa.	Dr. Welwitsch [P.].

2. Xenopus muelleri.

Dactylethra mülleri, *Günth. Cat.* p. 2.
Dactylethra mülleri, *Peters, Mon. Berl. Ac.* 1844, p. 37, *and Arch. f. Naturg.* 1855, p. 58.
Xenopus mülleri, *Peters, Mon. Berl. Ac.* 1875, p. 201.

Differs from *X. laevis* in the longer tentacle below the eye (this tentacle measuring about the diameter of the eye), and the presence of a sharp claw at the base of the first toe. Hind limb longer, the tarso-metatarsal articulation marking the tip of the snout (♀) or beyond. Size smaller.

Tropical Africa.

a–c. ♀ & hgr.	Zanzibar.	Sir J. Kirk [C.].
d. ♀.	Benguella.	Prof. Barboza du Bocage [P.].
e–f. Hgr.	W. Africa.	Mr. Fraser [C.].
g. Hgr.	W. Africa.	

3. Xenopus calcaratus.

Dactylethra mülleri, *Hallow. Proc. Ac. Nat. Sc. Philad.* 1857, p. 65; *A. Dum. Arch. Mus.* x. p. 231, pl. 18. f. 5.
Silurana tropicalis, *Gray, Ann. & Mag. N. H.* xiv. 1864, p. 315, *and Proc. Zool. Soc.* 1864, p. 458.
Xenopus mülleri, *Steindachn. Novara, Amph.* p. 4.
—— calcaratus, *Buchh. & Peters, Mon. Berl. Ac.* 1875, p. 200.

Well distinguished from the two preceding by the smaller head and extremely minute eyes. A much developed metatarsal claw. Subocular tentacle short. Tarso-metatarsal articulation marking the eye, or not quite so far. Size small.

West Africa.

a–d. ♂ ♀.	—— ?	Stevens.
e–h. Larvæ.	Lagos.	T. Moore, Esq. [P.]. (Types of *Silurana tropicalis*.)

14. PIPIDÆ.

Astrodactylidæ, *Hogg, Classif. Amph., Mag. N. H.* (n. s.) iii. 1839 (*name only*).
Pipidæ, *Günth. Cat.*; *Cope, Nat. Hist. Rev.* 1865; *Mivart, Proc. Zool. Soc.* 1869.

Teeth none.

1. PIPA.

Pipa, *Laur. Syn. Rept.* p. 25; *Merr. Tent.* p. 179; *Cuv. Règne Anim.*; *Dum. & Bibr.* viii. p. 767; *Günth. Cat.* p. 2.
Asterodactylus, *Wagl. Syst. Amph.* p. 199; *Tschudi, Batr.* p. 89.
Leptopus, sp., *Mayer, Anal.* p. 34.

Pupil round. Palate smooth. No tympanum. Fingers free, ending in four appendages; toes very broadly webbed, pointed. Outer metatarsals separated. Female with pouches in the back. Coracoids and precoracoids strongly divergent, former much dilated, connected by a broad double, not overlapping, cartilage; omosternum rudimentary; sternum a large cartilaginous plate. Diapophyses of sacral vertebra very strongly dilated. Terminal phalanges pointed.

Tropical America.

i. n. 87 Liberia Büttikofer.

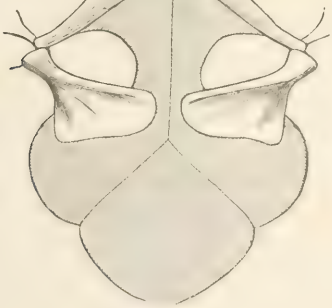
k. 8 Ilha das Onças, nr. Para. föld

1. Pipa americana.

Pipa americana, *Günth. Cat.* p. 3.
Seba, i. 77. 1–4; *Merian, Ins. Surin.* t. 59.
Rana pipa, *Linn. Mus. Ad. Frid.* p. 121, *and S. N.* p. 354; *Shaw, Zool.* iii. p. 167, pls. 50 & 51; *Blumenb. Abbild.* pl. 36; *Breyer, Observ. Anat. Diss. Præs. Rudolphi, Berl.* 1811; *Mayer, Nova Acta*, 1825, p. 527, pl. 49.
Pipa americana, *Laur. Syn. Rept.* p. 25; *Cuv. R. A.*; *Dum. & Bibr.* p. 773, pl. 92. f. 2.
Rana dorsigera, *Schneid. Hist. Amph.* p. 121, pls. 1 & 2.
Bufo dorsiger, *Daud. Rain.* p. 85, *and Rept.* viii. p. 172.
Pipa tedo, *Merr. Tent.* p. 179.
Pipa curucuru, *Spix, Spec. Nov. Test. Ran.* pl. 22. f. 1 & 2.
Leptopus asterodactylus, *Mayer, Anal.* p. 34.
Pipa dorsigera, *Gravenh. Delic.* p. 70.
Asterodactylus pipa, *Wagl. Syst. Amph.* p. 199; *Tschudi, Batr.* p. 89.

Head extremely depressed, triangular; eye minute; one or two short tentacles on the upper lip, in front of the eye; a large dermal flap at the angle of the mouth, sometimes another at the tip of the snout. Fingers very slender, subequal in size; toes very broadly webbed, third and fourth nearly equal; no subarticular tubercles; a blunt inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye or not so far. Skin covered with small tubercles. Olive-brown or blackish above; beneath lighter, sometimes white-spotted, or with a black stripe along the middle of the belly.

Guianas; Brazil.



Sternal apparatus.

a. ♂.	Grenada Isl.	
b. ♂.	British Guiana.	Sir R. Schomburgk [P.].
c, *d*, *e*. ♂ ♀.	Surinam.	
f. ♀.	Tropical America.	Sir A. Smith [P.].
g, *h*. ♀.	Tropical America.	
i. Skeleton.	——?	Mr. Damon.

ADDENDA.

Page 20. **Rana kuhlii.**

Add:—

g–h. ♂ ♀. Tenasserim. Col. Beddome [C.].

Page 25. **Rana macrodon.**

Add:—

r–s. ♀. Tenasserim. Col. Beddome [C.].

Page 25. **Rana modesta.**

Add:—

k–m. Hgr. Tenasserim. Col. Beddome [C.].

Referred with some doubt to this species, perhaps the young of *Rana macrodon*.

Page 33. **Rana dobsonii.**

Add:—

b. ♀. S. Canara. Col. Beddome [C.].

This specimen has a narrow light vertebral line.

Page 53. **Rana mascareniensis.**

Add:—

β–γ. ♀. Ankafana, Betsileo. Rev. Deans Cowan [C.].

Page 55. Add two new species:—

73 *a*. **Rana betsileana.**

Vomerine teeth in two slightly oblique groups just behind the level of the choanæ. Head moderate; snout subacute; canthus rostralis distinct; loreal region concave; interorbital space as broad as the upper eyelid; tympanum distinct, about two thirds the diameter of the eye. Fingers and toes moderate, the tips dilated into very small disks; first and second fingers equal; toes half webbed; subarticular tubercles moderate; a small inner metatarsal tubercle; no outer tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches to, or nearly to, the tip of the snout. Back with scarcely prominent, short glandular

longitudinal folds; a glandular lateral fold; lower surfaces smooth. Brown above, with rather large blackish spots; a triangular or chevron-shaped blackish marking between the eyes; generally a light spot on the tip of the snout; sometimes a light vertebral stripe; hind limbs regularly cross-barred, broader bars generally alternating with narrower ones; lower surfaces, and sometimes also sides of the body, dirty white; gular and thoracic regions mottled with brown. Male with two internal vocal sacs. From snout to vent 34 millim.

Madagascar.

a. Several spec.: ♂, ♀, & hgr.	East Betsileo.	Rev. Deans Cowan [C.]
b–f. ♂, ♀, & hgr.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].
g. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

73*b*. Rana curta.

Vomerine teeth in two oblique groups behind the level of the choanæ. Head moderate; snout rounded; canthus rostralis obtuse; loreal region slightly concave; interorbital space as broad as the upper eyelid; tympanum distinct, half or three fifths the diameter of the eye. Fingers and toes moderate, the tips dilated into very small disks; first and second fingers equal; toes three fourths webbed; subarticular tubercles rather small; a small inner metatarsal tubercle; no outer tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches the eye. Back with very indistinct flat warts; lower surfaces smooth. Olive-brown above, with rather indistinct darker spots; a dark triangular spot between the eyes; a dark temporal spot; hind limbs with dark cross bars; beneath dirty white, uniform or clouded with brown. Male with two internal vocal sacs. From snout to vent 39 millim.

Madagascar.

a–e. ♂, ♀, hgr., & yg.	East Betsileo.	Rev. Deans Cowan [C.].
f–g. ♀.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

Page 56. **Rana beddomii.**

Add:—

t–u. ♀ & hgr.	Malabar.	Col. Beddome [C.].

The adult female is larger than any specimen yet received, measuring 67 millim. from snout to vent; it is beautiful uniform pink above, the markings on the back and limbs being absent. The half-grown specimen is purplish pink, with the ordinary dark markings.

Page 58. **Rana diplosticta.**

Add:—

g. ♀.	Anamallays.	Col. Beddome [C.].

Page 58. Add a new species :—

77 *a*. **Rana phrynoderma.**

Vomerine teeth in two slightly oblique oval groups between the choanæ. Tongue with a free, pointed, conical papilla in the middle. Head moderate; snout rounded, with indistinct canthus rostralis; interorbital space narrower than the upper eyelid; tympanum rather indistinct, about two thirds the diameter of the eye. Fingers and toes rather short, the tips dilated into small disks; first finger not extending as far as second; toes one-fourth webbed; subarticular tubercles well developed; a small, oval, inner metatarsal tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout. Upper parts covered with warts of different sizes and short glandular folds. Dark greyish brown above, with obsolete darker spots; limbs with regular cross bars; beneath brown, dotted with whitish. From snout to vent 35 millim.

South India.

a–b. Hgr.	Anamallays.	Col. Beddome [C.].

Page 64. **Rana temporalis.**

Add :—

p–q. ♂ ♀.	Malabar.	Col. Beddome [C.].

Page 67. **Rana inguinalis.**

Add :—

b–c. ♀.	East Betsileo.	Rev. Deans Cowan [C.].
d. ♀.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

The hinder side of the thighs is black, elegantly spotted with white; upper parts sometimes purplish pink; a very narrow vertebral line may be present.

Page 68. **Rana granulata.**

For "Fingers slender, first longer than second," read "Fingers slender, first shorter than second."

Page 68. Add three species :—

96 *a*. **Rana ulcerosa.**

Limnodytes ulcerosus, *Boettger, Zool. Anz.* 1880, p. 282, and *Abh. Senck. Ges.* xii. p. 70, pl. iv. f. 17.

Vomerine teeth in two small groups behind the level of the choanæ. Habit stout. Head moderate; snout obtuse; canthus rostralis moderately marked; loreal region distinctly concave; tympanum of male more than two thirds, of female more than half the size of the eye. First and second fingers equal; toes two-thirds or three-fourths webbed; tips of fingers and toes dilated into small

disks; subarticular tubercles moderately prominent; a single metatarsal tubercle. Hind limb short. Back with more or less distinct, irregular, longitudinal warts; a fold from the eye to the shoulder; lower surfaces smooth, except the hinder part of the belly and the thighs, which are granulate; a circular flat gland below each thigh on its inner side; this gland perforated in the male. Dark grey above, with or without darker markings, the most constant being a cross band between the eyes and cross bands across the hind limbs; sometimes a light vertebral line; lower surfaces dirty white, closely marbled and dotted with black; lower lip tessellated with black and white.

Nossi Bé, Madagascar.

96 *b*. Rana femoralis.

Vomerine teeth in two small, rather widely separate groups behind the level of the choanæ. Head moderate; snout subtriangular, truncate; canthus rostralis angular; loreal region nearly vertical, distinctly concave; interorbital space as broad as the upper eyelid; tympanum distinct, two thirds or three fourths the diameter of the eye. Fingers moderate, first not extending as far as second; toes moderate, three-fourths webbed; tips of fingers and toes dilated into small, regular disks; subarticular tubercles small; a small inner metatarsal tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches to between the eye and the tip of the snout. Back with more or less distinct, flat smooth warts; a fold above the tympanum; lower surfaces smooth, except the hinder part of the belly and the thighs which are granulate; a circular flat gland with a more or less distinct median depression below each thigh on its inner side. Dark brown or blackish above; a black temporal spot; loins marbled with black and bright yellow; axillæ sometimes yellow; hind limbs with rather indistinct darker cross bars; hinder side of thighs black, generally dotted or marbled with yellow; lower surfaces brown, dotted and marbled with blackish. Male with two internal vocal sacs. From snout to vent 50 millim.

Madagascar.

a–d. ♂ & hgr.	East Betsileo.	Rev. Deans Cowan [C.].

96 *c*. Rana cowanii.

Vomerine teeth in two small oblique groups behind the level of the choanæ. Head moderate; snout subtriangular, rather prominent; canthus rostralis distinct; loreal region nearly vertical; interorbital space as broad as the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers moderate, first shorter than second; toes rather short, entirely webbed; tips of fingers dilated into large disks, the diameter of which equals one third that of the eye; tips of toes dilated into smaller, but well-developed disks;

subarticular tubercles small; a small, indistinct, inner metatarsal tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above and beneath, sides glandular; a fold above the tympanum. Blackish brown above; two rather indistinct broad bars across the back, a triangular spot between the eye, and cross bars on the limbs black; sometimes minutely punctulated with whitish; sides of body and of hind limbs with bright yellow spots; lower surfaces brown, spotted or marbled with lighter. Male with two internal vocal sacs. From snout to vent 42 millim.

Madagascar.

a–b. ♂.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].
c. ♂.	East Betsileo.	Rev. Deans Cowan [C.].

Page 71. Add a new species:—

101*a*. Rana latopalmata.

Vomerine teeth in two short transverse, slightly oblique series between the choanæ. Head moderate, rather depressed; snout subacuminate, with angular canthus rostralis and deeply concave loreal region; interorbital space slightly narrower than the upper eyelid; eye large; tympanum distinct, two fifths the diameter of the eye. Fingers rather slender, first a little shorter than second, the tips dilated into large disks; toes very broadly webbed, the disks (which are smaller than those of the fingers) partly included in the membrane; subarticular tubercles small; two very small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Skin finely shagreened above, and with scattered small smooth warts. Olive-brown above, closely spotted with darker on the head and back; limbs with dark cross bars; hinder side of thighs finely blackish-marbled on a light ground; beneath white, the throat sometimes brown-spotted. From snout to vent 52 millim.

Tenasserim.

a–f. Hgr. & yg.	Tenasserim.	Col. Beddome [C.].

Page 73. Add two new species:—

107*a*. Rana plicifera.

Vomerine teeth in two small oblique groups behind the level of the choanæ. Head moderate; snout pointed; canthus rostralis angular; loreal region concave; interorbital space as broad as the upper eyelid; tympanum half the diameter of the eye. Fingers and toes rather slender, the tips dilated into small, regular disks; first finger a little shorter than second; toes somewhat more than half webbed; subarticular tubercles moderate; inner metatarsal tubercle small; no outer tubercle. If the hind limb is carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip

of the snout. Skin smooth above; two narrow glandular folds on scapular region, directed inwards, each commencing from the upper eyelid; another fold on each side of the back, commencing where the other disappears, ending on sacral region; a fold from the eye to the shoulder; belly granulate. Dark brown above, a cross streak between the eyes and the glandular folds lighter; a light vertical streak on the tip of the snout, and in one specimen (*d*) a large yellowish spot on loreal region; limbs with regular dark cross bars; hinder side of thighs brown and whitish marbled: in one specimen the space between the anterior glandular folds light-coloured; beneath whitish; throat brown, whitish dotted. Male with two vocal sacs, conspicuous externally by a strong fold on each side of the throat. From snout to vent 38 millim.

Madagascar.

a–c, d. ♂, ♀, & hgr. East Betsileo. Rev. Deans Cowan [C.].

107*b*. Rana aspera.

Vomerine teeth in two small groups behind the level of the choanæ. Head moderate; snout pointed; canthus rostralis angular; loreal region very elevated, concave; interorbital space narrower than the upper eyelid; tympanum two thirds or three fourths the diameter of the eye. Fingers and toes slender, the tips dilated into small regular disks; first and second fingers equal; toes half webbed; subarticular tubercles well developed; inner metatarsal tubercle small, prominent; outer metatarsal tubercle very small or absent. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches beyond the tip of the snout. Upper surfaces, especially head and back, with prominent glandular folds and tubercles; upper eyelid with conical tubercles; a conical dermal spur just below the tibio-tarsal articulation; belly granulate. Olive or pinkish above, spotted with blackish; limbs with blackish cross bars; lips with vertical black spots; sometimes a narrow vertebral line or broad stripe whitish; in one specimen, a large, transversely oval whitish spot between scapulæ; beneath whitish, throat and breast marbled with brown. Male with two vocal sacs, conspicuous externally by a strong fold on each side of the throat, which is blackish. From snout to vent 30 millim.

Madagascar.

a–d, e–g. ♂ ♀. East Betsileo. Rev. Deans Cowan [C.].

Page 76. Rhacophorus goudoti.

Add:—

e–f, g–h. ♂ ♀. East Betsileo. Rev. Deans Cowan [C.].

In two male specimens (*g–h*), the lower surfaces are bright yellow, marbled with grey.

Page 76. Add a new species:—

1 *a*. Rhacophorus rhodoscelis.

Vomerine teeth in two short transverse series behind the level of the choanæ. Snout rounded; canthus rostralis distinct; loreal region very slightly concave; nostril nearer the eye than the tip of the snout; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers nearly one-third webbed; toes two-thirds webbed; disks of fingers and toes smaller than the tympanum; subarticular tubercles little developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above, granulate on the belly and under the thighs. Light brown or yellowish above, dotted or reticulated with blackish; a blackish streak on canthus rostralis and upper lip; temporal region blackish; hind limbs with more or less distinct dark cross bars; sides of thighs, lower surface of tibiæ, inner side of tarsi, three inner toes, and membrane between the latter and the two outer fingers crimson; the same colour extends sometimes on the flanks; beneath white, marbled with blackish, especially on the throat; in one specimen the belly is marbled with crimson. Male with an internal vocal sac. From snout to vent 38 millim.

Madagascar.

a–e. ♂, ♀, & hgr.	East Betsileo.	Rev. Deans Cowan [C.].
f. ♀.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

Page 77. Add four species:—

3 *a*. Rhacophorus femoralis.

Vomerine teeth in two small groups close together behind the level of the choanæ. Snout short, rounded; canthus rostralis distinct; loreal region slightly concave; nostril halfway between the eye and the tip of the snout; interorbital space a little broader than the upper eyelid; tympanum small, indistinct. Fingers webbed at the base; toes three-fourths webbed; disks moderate; subarticular tubercles well developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the centre of the eye. Skin smooth above, granulate on the belly and under the thighs. Grey above, dotted with darker and lighter; upper lip white-spotted; flanks black and white marbled; humerus black above, with a white longitudinal streak; another white streak along the femur; latter uniform black behind, white with vertical black spots in front; beneath dirty white, immaculate. From snout to vent 27 millim.

Madagascar.

a. Hgr.	East Betsileo.	Rev. Deans Cowan [C.].

3 *b*. Rhacophorus boettgeri.

Hylambates microtympanum, *Boettger, Zool. Anz.* 1881, p. 47, and *Abh. Ver. Brem.* vii. p. 185, and *Abh. Senckenb. Ges.* xii. p. 514.

Vomerine teeth in two small groups behind the level of the choanæ. Snout rounded; canthus rostralis rounded; loreal region slightly concave; nostril halfway between the eye and the tip of the snout; interorbital space broader than the upper eyelid; tympanum small, indistinct. Fingers webbed at the base; toes two-thirds webbed; disks very small; subarticular tubercles not much developed; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the posterior border of the eye. Skin smooth above, granulate beneath. Green or greyish-olive above, with small insuliform, light-edged reddish-brown spots or ocelli; a brown, above light-edged streak from the tip of the snout through the eye along the side of the body; latter brown, white-spotted; a brown light-edged line along both sides of the limbs; hinder side of thighs brown, white-spotted; beneath dirty white or brownish, with or without darker marblings on the throat and breast. Male with an internal vocal sac.

Madagascar.

a–b, *c–d*. ♂ ♀.	East Betsileo,	Rev. Deans Cowan [C.].
e–f. ♀.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

3 *c*. Rhacophorus pulcher.

Vomerine teeth in two small oblique groups, commencing from the inner hinder edge of the choanæ. Head depressed; snout pointed; canthus rostralis angular; loreal region nearly vertical; nostril nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum moderately distinct, one third the diameter of the eye. Fingers webbed at the base; toes not quite half webbed; disks as large as the tympanum; subarticular tubercles not much developed; two small metatarsal tubercles. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye. Skin smooth above and beneath. Light olive above, punctate with vinaceous red; a streak of the same colour from the tip of the snout through the eye to the middle of the side, where it ends in a large spot; lower surfaces not coloured. The skeleton bright green. From snout to vent 25 millim.

Madagascar.

a–e. Yg.	Ankafana, Betsileo,	Rev. Deans Cowan [C.].

3 *d*. Rhacophorus depressiceps.

Vomerine teeth in two slightly oblique groups behind the level of the choanæ. Head much depressed; snout subacuminate; canthus rostralis angular; loreal region slightly concave, nearly vertical;

nostril a little nearer the tip of the snout than the eye; interorbital space broader than the upper eyelid; tympanum half the diameter of the eye. Fingers long, slightly webbed at the base; toes long, half webbed; disks nearly as large as the tympanum; subarticular tubercles rather small; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches between the eye and the tip of the snout. Skin smooth; belly slightly granulate. Olive above, snout lighter; loreal and temporal regions blackish; sides of body marbled with dark brown; hind limbs indistinctly cross-barred; greyish white beneath, spotted with dark brown. Male with internal vocal sacs. From snout to vent 39 millim.

Madagascar.

a–b. ♂.	East Betsileo.	Rev. Deans Cowan [C.].
c–d. ♂.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

Page 86. Add a new species:—

22 *a*. Rhacophorus luteus.

Vomerine teeth in two short transverse series behind the level of the choanæ. Snout rounded; canthus rostralis rather indistinct; loreal region not concave; nostril nearer the eye than the tip of the snout; interorbital space broader than the upper eyelid; tympanum indistinct, about half the diameter of the eye. Outer fingers half webbed, toes three-fourths webbed; disks of fingers about half the diameter of the eye, of toes rather smaller; subarticular tubercles moderate; a small, conical, inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the front of the eye. Skin smooth above, granulate beneath; a short transverse flap of skin on the tibio-tarsal articulation. Upper surfaces bright yellow; lower surfaces and sides of limbs not coloured; sides of body white-dotted; a white line along the outer side of forearm and fourth finger, on tibio-tarsal flap, and along outer side of tarsus and fifth toe. Male with an internal vocal sac. From snout to vent 47 millim.

Madagascar.

a–b. ♂ & hgr.	Ankafana, Betsileo.	Rev. Deans Cowan [C.].

Page 91. Add a new species:—

30 *a*. Rhacophorus beddomii.

Vomerine teeth in two oblique series between, and extending backwards a little beyond, the choanæ. Snout subtriangular; canthus rostralis distinct; loreal region slightly concave; nostril equally distant from the eye and the tip of the snout; interorbital space as broad as the upper eyelid; tympanum two fifths the width of the eye. Fingers and toes webbed to the disks, which are as large as the tympanum; subarticular tubercles moderate; a small

inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the front of the eye. Upper surfaces with very small smooth tubercles; a fold from the eye to the shoulder; a slight fringe along the forearm and tarsus; a transverse flap above the vent; beneath granulate. Light reddish brown above, indistinctly variegated with grey; hind limbs rather indistinctly cross-barred with grey. Male with an internal vocal sac. From snout to vent 49 millim.

Malabar.

a. ♂. Calcad Hills, Tinnevelly (3000 feet). Col. Beddome [C.].

Page 96. **Ixalus fuscus.**

Add:—

p–q. ♀. Malabar. Col. Beddome [C.].

Upper surfaces magenta-red.

Page 96. Add a new species:—

2 *a*. **Ixalus silvaticus.**

Snout rounded or subacuminate, slightly prominent, hardly as long as the orbital diameter; canthus rostralis angular; loreal region flat, vertical; nostril halfway between the eye and the tip of the snout; interorbital space a little broader than the upper eyelid; tympanum small, indistinct. Fingers free, toes one-third or two-fifths webbed, the membrane extending as a narrow fringe along their sides; disks of fingers and toes small; subarticular tubercles small; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation marks the posterior border or the centre of the eye. Skin smooth above and beneath; a narrow glandular lateral fold, commencing some distance from the eye; a fold from the eye to the shoulder. Brown above, with rather indistinct darker markings, the most constant being a broad chevron between the eyes; sides of head blackish brown; limbs cross-barred; hinder side of thighs blackish brown; groin and front of thighs frequently rose-coloured; brown beneath, throat and chest dotted, belly and lower surface of hind limbs marbled with whitish. Male with two internal vocal sacs. From snout to vent 27 millim.

Malabar.

a. Several spec. Malabar. Col. Beddome [C.].

Page 102. Add a new species:—

14 *a*. **Ixalus pulcher.**

Snout slightly pointed, a little shorter than the orbital diameter; canthus rostralis distinct; loreal region very slightly concave; nostril nearer the tip of the snout than the eye; interorbital

space broader than the upper eyelid; tympanum small, very indistinct in non-desiccated specimens. Fingers with a rudiment of web, toes half webbed; disks and subarticular tubercles moderate; a very small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the tip of the snout, or between the latter and the eye. Skin smooth above, granulate beneath; a fold from the eye to the shoulder. Blue-green or purplish above, generally uniform, sometimes with small black spots; a purplish-brown streak on canthus rostralis and generally on postocular fold; loreal region white, uniform or with purplish-brown spots, or purplish brown, dotted or not with whitish; arms, and generally forearms, colourless; thighs with a stripe of pigment on their upper surface. Male with an external subgular vocal sac, situated on the thoracic region. From snout to vent 23 millim.

S. India.

a. Many spec.: ♂, ♀, & hgr. Manantoddy. Col. Beddome [C.].

Page 114. Add a new genus:—

8*a*. NANNOBATRACHUS.

Pupil erect. Tongue free and nicked behind. Vomerine teeth. Tympanum hidden. Fingers and toes free, the tips dilated into small disks. Outer metatarsals separated by a groove. Omosternum and sternum slender, cartilaginous. Terminal phalanges bifurcate.

India.

Closely allied to *Nyctibatrachus*.

1. Nannobatrachus beddomii.

Vomerine teeth in two oblique oval groups behind the level of the choanæ. Habit stout. Snout short, rounded, without canthus rostralis; ~~interorbital space~~ narrow, much narrower than the ~~upper eyelid~~ interorbital space. Fingers moderate, first shorter than second; toes moderate, with a slight rudiment of web; disks and subarticular tubercles very small; a very indistinct inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the tip of the snout, or not quite so far. Skin quite smooth. Brown above, variegated with darker; generally a more or less defined light band on each side of the back; limbs cross-barred; whitish beneath, immaculate. From snout to vent 20 millim.

Malabar.

a–b. ♂. Malabar. Col. Beddome [C.].
c. Several spec., ♂ ♀. Tinnevelly. Col. Beddome [C.].

Page 120. Add a species :—

1 *a*. Rappia betsileo.

Eucnemis betsileo, *Grandid. Ann. Sc. Nat.* (5) xv. 1872, art. 20, p. 10.

Head very small; snout rounded, as long as the orbital diameter; tympanum hidden. Fingers half webbed; toes three-fourths webbed. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the eye or a little beyond. Skin smooth, granulate on the belly and under the thighs; no strong fold across the chest. Greenish or blackish above; a bright yellow, beneath black-edged, band from the tip of the snout through the eye along each side of the body; thighs, hands, and feet bright yellow.

Closely allied to *R. horstockii*, but differing in the smaller head. Specimen *e* of the latter species should be referred to *R. betsileo*.

Madagascar.

a. ♀.	S.E. Betsileo.	
b–d, *e–f*. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

Page 129. **Megalixalus madagascariensis.**

Add :—

s–t. ♀.	East Betsileo.	Rev. Deans Cowan [C.].

Sides of head and body, fore limbs, thighs above and beneath, and feet bright yellow. Doubtless the *Eucnemis antanosi* of Grandidier.

Page 137. **Hylambates microtympanum**

is to be referred to the genus *Rhacophorus*.

Page 142. Add a new species :—

4. Mantella cowanii.

Snout subtriangular, a little longer than the diameter of the eye; canthus rostralis distinct; loreal region vertical; interorbital space broader than the upper eyelid; tympanum distinct, two fifths the diameter of the eye. Fingers and toes moderate, the tips dilated into very small disks; subarticular tubercles distinct; a small inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the eye, or a little beyond. Skin smooth, except on the flanks and the lower surface of the thighs, which are granulate; a slight fold from the eye to the shoulder. Black; a large spot at the base of the limbs, extending on the humerus and femur, and round spots on the throat, belly, and lower surface of femora yellow; a broad band encircling

tibia and another encircling tarsus deep orange. From snout to vent 26 millim.

Madagascar.

a–b. ♀. East Betsileo. Rev. Deans Cowan [C.].

Page 158. **CALOPHRYNUS.**

Third line of generic diagnosis, for "Tympanum distinct" read "Tympanum distinct or hidden."

Add a new species:—

3. Calophrynus madagascariensis.

Snout short, rounded; canthus rostralis obtuse: loreal region oblique, slightly concave; interorbital space as broad as the upper eyelid; tympanum hidden. Fingers moderate, pointed, first a little shorter than second; toes moderate, pointed, one-third webbed; subarticular tubercles very indistinct; inner metatarsal tubercle large, shovel-shaped; no outer tubercle. Limbs very short; the hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the shoulder. Skin smooth above, slightly granulate beneath. Olive above, with large insuliform dark, light-edged spots, which themselves include numerous small light insuliform spots; beneath white, with scattered blackish spots. From snout to vent 55 millim.

Madagascar.

a. ♀. East Betsileo. Rev. Deans Cowan [C.].

Page 158. Add a new genus:—

6 *a*. SCAPHIOPHRYNE.

Pupil horizontal. Tongue elliptic, entire, and free behind. Vomerine teeth none. A transverse dermal ridge in front of the œsophagus, and another curved one in front of this. No tympanic disk. Fingers free, the tips dilated into large disks; toes webbed at the base, the tips not dilated. Outer metatarsals united. Precoracoids present, weak; no omosternum; sternum cartilaginous. Diapophyses of sacral vertebra feebly dilated. Terminal phalanges of fingers T-shaped, of toes simple.

Madagascar.

1. Scaphiophryne marmorata.

Head small; snout very short, truncate; loreal region vertical; interorbital space as broad as the upper eyelid. First finger shorter than second; disks heart-shaped; toes slightly webbed at the base; metatarsal tubercles feebly developed; a large, shovel-shaped metatarsal tubercle; a small tarsal tubercle below the tibio-tarsal articulation. The hind limb being carried forwards along the body,

the tarso-metatarsal articulation marks the front of the eye. Upper surfaces with smooth warts; a fold from the eye to the shoulder; belly and lower surface of thighs granulate. Green above, marbled with black; a hourglass-shaped black spot beginning between the eyes; limbs with broad black cross bars; digital disks pink above; lower surfaces black, marbled with yellow. From snout to vent 30 millim.

Madagascar.

a. Hgr.?	East Betsileo.	Rev. Deans Cowan [C.].

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The synopsis of the genera of the family *Dyscophidæ* is modified as follows:—

I. Pupil vertical.

Vomerine teeth in a long transverse series; precoracoids present; sternum very large; tips of fingers and toes not dilated.

1. **Dyscophus**, p. 180.

Vomerine teeth in a long transverse series; precoracoids present; sternum small; tips of fingers and toes not dilated.

2. **Calluella**, p. 181.

Vomerine teeth in a long transverse series; no precoracoids; sternum small; tips of fingers and toes dilated.

3. **Plethodontohyla**, pp. 182, 473.

II. Pupil horizontal.

Vomerine teeth in two small groups; precoracoids present; sternum small: tips of fingers and toes dilated.

4. **Platypelis**, p. 474.

Vomerine teeth in a single, median group; tips of fingers and toes dilated ..... 5. **Cophyla**, p. 475.

Page 182. **COPHYLA.**

The diagnosis given does not apply to the genus so named by Dr. Boettger, but to a new genus:—

3. PLETHODONTOHYLA.

The type being:—

1. Plethodontohyla notosticta.

Two new species are added:—

2. Plethodontohyla inguinalis.

Snout short, rather pointed; canthus rostralis angular; interorbital space broader than the upper eyelid; tympanum slightly distinct, about two fifths the diameter of the eye. Fingers and toes rather slender, the tips dilated into small triangular disks: first finger a little shorter than second; subarticular tubercles of fingers

slightly developed, of toes indistinct; metatarsal tubercle indistinct. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches far beyond the tip of the snout. Skin everywhere smooth; a narrow glandular fold from the eye to the side of the body. Dark olive above; glandular fold and a cross band between the eyes lighter; a black, light-edged spot in the inguinal region; hind limbs with black cross bands; sides of thighs and lower surface of tibiæ dotted with whitish; brown beneath, with darker vermiculations. From snout to vent 60 millim.

Madagascar.

a. ♀. East Betsileo. Rev. Deans Cowan [C.].

3. Plethodontohyla brevipes.

Series of palatine teeth forming a ⌣. Snout short, rounded; canthus rostralis distinct; interorbital space broader than the upper eyelid; tympanum slightly distinct, two thirds the diameter of the eye. Fingers and toes short, the tips simply swollen; first finger shorter than second; subarticular tubercles and metatarsal tubercle very indistinct. The hind limb being carried forwards along the body, the tarso-metatarsal articulation reaches the posterior border of the eye. Skin shagreened; a fold from the eye to the shoulder. Uniform dark brown above; throat brown; belly dirty white, variegated with brown. From snout to vent 34 millim.

Madagascar.

a. ♀. East Betsileo. Rev. Deans Cowan [C.].

Add a new genus:—

4. PLATYPELIS.

Pupil horizontal. Tongue large, oval, entire, and free behind. Vomerine teeth in two small groups close together behind the level of the choanæ. Tympanum slightly distinct. Fingers with a rudiment of web; toes webbed at the base, the tips dilated into regular disks. Outer metatarsals united. Coracoids strong; precoracoids weak, resting upon coracoids; no omosternum; sternum a small cartilaginous plate. Diapophyses of sacral vertebra moderately dilated. Terminal phalanges T-shaped.

Madagascar.

1. Platypelis cowanii.

Head depressed; snout very short, rounded; canthus rostralis scarcely distinct; interorbital space as broad as the upper eyelid; tympanum nearly as large as the eye. Fingers short, first much shorter than second, slightly webbed at the base, the tips dilated into large, truncated disks; toes short, one-fourth webbed, the disks smaller than those of the fingers; subarticular tubercles feeble; a very indistinct inner metatarsal tubercle. The hind limb being carried forwards along the body, the tarso-metatarsal articulation marks the centre of the eye. Skin smooth above and beneath.

Olive above, marbled with darker: tibia and tarsus regularly cross-barred; lower surfaces dirty white. From snout to vent 29 millim.

Madagascar.

a. ♀. East Betsileo. Rev. Deans Cowan [C.].

The genus *Cophyla* is characterized as follows:—

5. COPHYLA.

Cophyla, *Boettger, Zool. Anz.* 1880, p. 281, and *Abh. Senck. Ges.* xii. p. 516.

Pupil horizontal. Tongue large, entire, and free behind. Vomerine teeth in a single median group behind the level of the choanæ. Tympanum hidden. Fingers free; toes with a rudiment of web, the tips dilated into large disks, which are divided on their upper surface by a longitudinal groove. Osteological characters unknown.

Madagascar.

1. Cophyla phyllodactyla, p. 183.

Cophyla phyllodactyla, *Boettg. l. c.* pl. v. f. 19.

Nossi Bé.

Page 299.

Bufo benguelensis.

On comparison of this species with a specimen of *Bufo funereus* (Bocage, Jorn. Sc. Lisb. 1866, p. 77) sent by Prof. Bocage to the British Museum, we find that they are identical; therefore the latter name has to be adopted.

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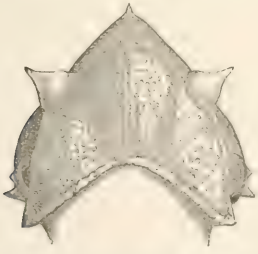
Hemiphractus scutatus.



The upper view of the head of this frog has been inadvertently omitted.

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THE END.

BRITISH MUSEUM NATURAL HISTORY Z D

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Plate XIV.

Fig. 1. *Pseudis minuta*, Gthr., p. 187.
1 *a*. —— ——, mouth.
2. *Hylodes conspicillatus*, Gthr., p. 204.
2 *a*. —— ——, mouth.
3. —— *surdus*, Blgr., p. 212.
3 *a*. —— ——, mouth.
4. —— *unistrigatus*, Gthr., p. 217.
5. —— *buckleyi*, Blgr., p. 217.
5 *a*. —— ——, mouth.
6. —— *curtipes*, Blgr., p. 218.

Plate XV.

Fig. 1. *Ceratophrys appendiculata*, Gthr., p. 222.
1 *a*. —— ——, lateral view of head.
1 *b*. —— ——, mouth.
2. —— *fryi*, Gthr., p. 223.
2 *a*. —— ——, upper view of head.
2 *b*. —— ——, mouth.

Plate XVI.

Fig. 1. *Edalorhina buckleyi*, Blgr., p. 228.
1 *a*. —— ——, lower view.
1 *b*. —— ——, mouth.
2. —— *perezii*, Espada, p. 227, upper view of head.

Fig. 3. *Leptodactylus longirostris*, Blgr., p. 240.
3 *a*. —— ——, lateral view of head.
3 *b*. —— ——, mouth.
4. —— *albilabris*, Gthr., p. 245.
4 *a*. —— ——, lateral view of head.
4 *b*. —— ——, mouth.

PLATE XVII.

Fig. 1. *Borborocœtes calcaratus*, Gthr., p. 256.
2. —— *coppingeri*, Gthr., p. 257.
2 *a*. —— ——, mouth.
3. *Limnodynastes platycephalus*, Gthr., p. 260.
4. *Chiroleptes platycephalus*, Gthr., p. 268.
4 *a*. —— ——, mouth.
5. —— *brevipalmatus*, Gthr., p. 269.

PLATE XVIII.

Fig. 1. *Chiroleptes alboguttatus*, Gthr., p. 270.
2. *Pseudophryne guentheri*, Blgr., p. 279.
3. *Nectophryne guentheri*, Blgr., p. 280.
4. *Bufo leptopus*, Gthr., p. 287.

PLATE XIX.

Fig. 1. *Bufo beddomii*, Gthr., p. 289.
2. —— *latastii*, Blgr., p. 294.
3. —— *benguelensis*, Blgr., p. 299 (= *B. funereus*, Boc.).
4, —— *blanfordii*, Blgr., p. 301.

PLATE XX.

Bufo himalayanus, Gthr., p. 305.

PLATE XXI.

Fig. 1. *Bufo cœruleostictus*, Gthr., p. 291.
2. —— *parietalis*, Blgr., p. 312.

Plate XXII.

Fig. 1. *Bufo microtympanum*, Blgr., p. 307.
2. —— *ceratophrys*, Blgr., p. 319.
3. *Notaden bennetti*, Gthr., p. 328.
3 *a*. —— ——, lateral view of head.

Plate XXIII.

Fig. 1. *Chorophilus septentrionalis*, Blgr., p. 335.
2. *Hyla appendiculata*, Blgr., p. 349.
3. —— *inframaculata*, Blgr., p. 354.
3 *a*. —— ——, mouth.
4. —— *alboguttata*, Blgr., p. 356.
4 *a*. —— ——, mouth.

Plate XXIV.

Fig. 1. *Hyla tuberculosa*, Blgr., p. 355.
1 *a*. —— ——, mouth.
2. —— *granosa*, Blgr., p. 358, male.
3. —— ——, female.
3 *a*. —— ——, mouth.
4. —— *albopunctulata*, Blgr., p. 385.
4 *a*. —— ——, mouth.

Plate XXV.

Fig. 1. *Hyla buckleyi*, Blgr., p. 362.
1 *a*. —— ——, mouth.
2. —— *quadrangulum*, Blgr., p. 367.
2 *a*. —— ——, mouth.
3. —— *parviceps*, Blgr., p. 393.
4. —— *depressiceps*, Blgr., p. 402.
4 *a*. —— ——, mouth.
5. *Hylella buckleyi*, Blgr., p. 420.

Plate XXVI.

Fig. 1. *Hyla infrafrenata*, Gthr., p. 385.
2. —— *nigrofrenata*, Gthr., p. 413.
2 *a*. —— ——, mouth.
3. —— *affinis*, Gray, p. 413.
4. —— *latopalmata*, Gthr., p. 414.

Plate XXVII.

Nototrema longipes, Blgr., p. 418, with lateral view of head and mouth.

Plate XXVIII.

Fig. 1. *Nototrema plumbeum*, Blgr., p. 417.
1 *a*. —— ——, mouth.
2. *Nyctimantis rugiceps*, Blgr., p. 422.
2 *a*. —— ——, mouth.

Plate XXIX.

Fig. 1. *Phyllomedusa buckleyi*, Blgr., p. 425.
2. —— *vaillantii*, Blgr., p. 427.
3. —— *sauvagii*, Blgr., p. 429.

Plate XXX.

Amphignathodon guentheri, Blgr., p. 450, with lateral view of head and mouth.

1. Borborocœtes calcaratus. 2. Berberycetus coppingeri.
3. Limnodynastes platycephalus. 4. Chiroleptes platycephalus.
5. Chiroleptes brevipalmatus.

Edwin Wilson del et lith

Masters Bros. imp

1. Chiroleptes alboguttatus. 2. Pseudophryne guntheri.
3. Nectophryne guntheri. 4. Bufo leptopus.

1. *Bufo beddomii*. 2. *Bufo taiastii*. 3. *Bufo benguelensis*.
4. *Bufo blanfordii*.

R. Mintern, del et lith. Mintern Bros imp.

Bufo himalayanus.

Edwin Wilson, del et lith. Mintern Bros. imp.

1. Bufo cœruleostictus. 2. Bufo parietalis.

Edwin Wilson, del et lith. Mintern Bros imp.

1. Bufo microtympanum. 2. Bufo ceratophrys.
3. Notaden bennetti

Edwin Wilson, del et lith. Mintern Bros imp.

1. Chorophilus septentrionalis. 2. Hyla appendiculata.
3. Hyla inframaculata. 4. Hyla alboguttata.

R. Mintern del. et lith.

Mintern Bros imp.

1. Hyla tuberculosa. 2. Hyla granosa. ♂.
3. Hyla granosa. ♀. 4. Hyla albopunctulata.

R. Mintern, del. et lith. Mintern Bros. imp.

1. *Hyla buckleyi*. 2. *Hyla quadrangulum*
2. *Hyla parviceps*. 4. *Hyla depressiceps*.
5. *Hylella buckleyi*

2

4

2a

3

1

R. Mintern del et lith.

Mintern Bros. imp.

1. *Hyla infrafrenata*.
2. *Hyla nigrofrenata*
3. *Hyla affinis*.
4. *Hyla latopalmata*

Edwin Wilson del et lith

Mintern Bros imp

Nototrema longipes.

R. Mintern, del et lith.

Mintern Bro's imp

1. Nototrema plumbeum. 2. Nyctimantis rugiceps.

2.

1.

3.

R. Mintern del. et lith.

Mintern Bros. imp.

1. Phyllomedusa buckleyi. 2. Phyllomedusa vaillantii.
3. Phyllomedusa sauvagii.

Edwin Wilson. del et lith. Mintern Bro's imp.

Amphignathodon güntheri.